Depolarization, Repolarization and Redistributive Ideological Change in Britain, 1983-2016

Abstract

In this article we examine party sorting, elite cue and ideological polarization accounts of polarization dynamics. We test their differing expectations about trends in redistributive ideological polarization and partisan polarization in the British case using repeated cross-section and panel data. We reject party sorting accounts, which require ideology to be stable and changes in party support to drive partisan polarization, because we find that ideology trends with elite polarization and that ideological change causes partisan polarization. We reject elite cue accounts, which argue that it is mainly the ideology of partisans that follows elite polarization, because we find virtually identical trends for initially ideological similar non-partisans too. We thus find support for an ideological polarization account where changes in elite polarization are associated with general changes in citizen redistributive ideology.

1 Introduction

After decades of convergence on redistributive issues, British political parties are now clearly polarizing again. Existing research on the relationship between these elite polarization dynamics and citizen ideology in Britain is dominated by party sorting mechanisms (Evans and Neundorf 2018; Milazzo, Adams, and Green 2012; Adams, Green, and Milazzo 2012b; Adams, Green, and Milazzo 2012a). In these accounts, citizen redistributive ideology is stable whilst partisanship changes. This means that partisan polarization (the ideological

difference between partisans of different parties) increases when elites polarize because ideological motivations become greater. This leads voters to change their partisanship, not their ideology, and sort on ideological lines. When elites converge the opposite happens, partisan depolarization occurs because ideological motivation declines.

Establishing whether party sorting does provide an account of British polarization is an important question. Finding ideological stability in Britain, probably the most extreme case of elite depolarization in recent decades, in conjunction with similar findings in the other extreme of polarization in the USA, would mean that party sorting mechanism are general, and ideological change is unlikely ever to be systematically associated with elite polarization (Adams, Green, and Milazzo 2012a). Stability implies that ideology can act as a fundamental constraint on the lattitude which parties have for movement because it operates as an 'unmoved mover' in the political system (Evans and Neundorf 2018). Party sorting findings also imply that top-down elite changes cause polarization dynamics, because there are no changes in citizen ideology to be a bottom-up cause (Evans and de Graaf 2013; Evans and Tilley 2012; Evans and Tilley 2011; Evans and Tilley 2017). This gives polarization dynamics considerable normative importance; the values which parties activate (or deactivate) by polarizing are associated with social groups and so cause the inclusion or exclusion of these groups from the political system. Specifically in the British case it is argued from party sorting assumptions that elite depolarization caused the decline of class voting, and the political exclusion of the working class.

In the broader polarization literature there are two main alternatives to party sorting, both of which stress the importance of ideological change: elite cue accounts, where partisans follow the ideological movement of parties, and ideological polarization accounts where general changes in citizen ideology are associated with elite polarization. Despite the conclusions which are reached, previous research on Britain does not establish the party sorting case against both elite cue and ideological polarization alternatives. Time-series cross sectional evidence for party sorting rests on the analysis of a small number of observations over short-time periods, drawn entirely from the period of elite depolarization, where trends

are not precisely estimated enough to rule out substantial ideological change. Apparently corroborating evidence, using panel data to study individual level mechanisms, gives results that are equally consistent with ideological polarization and party sorting mechanisms, only directly testing elite cue expectations.

In this article we examine party sorting, elite cue and ideological polarization accounts of redistributive polarization dynamics in Britain. We obtain many more observations over a longer time period, covering both depolarization and repolarization periods, by using data from the British Social Attitudes Survey (BSAS), the British Household Panel Survey (BHPS) and the British Election Study (BES). We use this data to answer three questions to enable proper differentiation between the three accounts of polarization. First, we ask whether ideology is stable or trends with elite and partisan polarization. Second, we ask whether partisan polarization dynamics are primarily caused by partisanship or ideological change. Finally, we ask whether any ideological polarization trends differ between partisans and initally ideologically similar non-partisans. We reject party sorting accounts, which require ideology to be stable and changes in party support to drive partisan polarization, because we find that ideology trends with elite polarization and that ideological change causes partisan polarization. We reject elite cue accounts, which argue that it is primarily the ideology of partisans that follows elite polarization, because we find virtually identical trends for initially ideological similar non-partisans too. We thus find support for an ideological polarization account where changes in elite polarization are associated with general changes in citizen redistributive ideology.

These results have importance for the understanding of polarization dynamics generally, and for the understanding of British politics specifically, not least because rejecting the party sorting case reverses many of the implications we described above. We conclude by discussing the implications which come with an ideological polarization account.

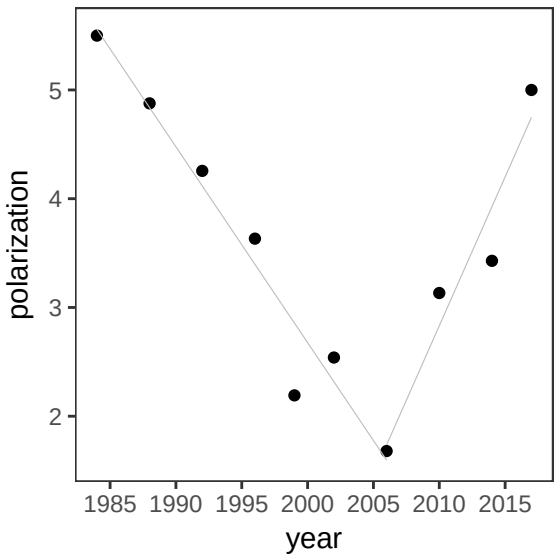


Figure 1: Elite Polarization in Britain, 1984-2017: Difference Between Labour and Conservative General Left Right Positions in Chapel Hill Expert Surveys (Polk et al. 2017; Ray 1999; Bakker et al. 2015; Steenbergen and Marks 2007).

2 Polarization, Partisanship and Ideology

Across Europe, elite depolarization took place over an extended period of time, there was a reduction in the ideological differences between parties particularly on the traditional left-right dimension of redistributive politics (Fiorina 2017; Huber and Inglehart 1995; Kitschelt 1994). The ideological convergence of Labour and Conservative parties in Britain is perhaps the most extreme example of this, as particularly the Labour Party, but also the Conservatives, shifted to the centre after the highly polarized general election of 1983 in efforts to become 'electable' (Hindmoor 2004; Bale 2017). However, it is now clear that British political parties are polarizing again, and have been doing so since the time of the financial crisis. This basic pattern of declining and then increasing elite polarization in Britain can be clearly be seen in expert survey measures of the difference between Labour and Conservative left-right positions as shown in Figure 1.

There is now considerable evidence that changes in elite polarization are generally associated with changes in partisan polarization, the ideological gap between partisans (Lachat 2008; Adams, de Vries, and Leitner 2012). The clear pattern of partisan depolarization in Britain, with a substantial decline in ideological difference between Labour and Conservative

partisans, has been presented as the 'mirror image' of the very well documented partisan polarization trend which has accompanied elite polarization in the USA since the 1970s (Adams, Green, and Milazzo 2012b; Green 2007; Green 2015). Unpicking the mechanisms which drive these trends in partisan polarization and depolarization has become one of the most important ways of understanding the relationship between elite polarization dynamics and public opinion (Fiorina and Abrams 2008; Hetherington 2009). In the large literature on these topics, much of which focuses on the US case, three mechanisms have been identified as causing changes in levels of partisan polarization: party sorting, ideological polarization and elite cues.

Party sorting mechanisms are widely found in accounts of partisan polarization and depolarization in both the US and other contexts (Fiorina, Abrams, and Pope 2008; Levendusky 2009; Baldassarri and Gelman 2008; Fiorina 2017; Lachat 2008; Green 2007). In short, the party sorting mechanism is that partisan polarization is caused by partisan identity changing whilst ideology remains constant (both for partisans and for all other citizens). With party sorting mechanisms, partisan polarization and depolarization arise because elites, not voters, change their ideological positions. When party elites are polarized, even though citizen ideology remains constant, party ideological signals become clearer and more consequential. Thus ideology becomes a more important factor in party evaluation causing partisanship to change and so become sorted along ideological lines.

The second account of partisan polarization dynamics, most clearly developed in the US literature, invokes general ideological polarization mechanisms (Abramowitz and Saunders 1998; Abramowitz and Saunders 2008; Abramowitz 2010; Abramowitz 2013; Campbell 2016). In short, the ideological polarization mechanism is that partisan polarization is caused by changes in the ideology of all citizens (partisans and non-partisans alike), whilst partisan identity remains constant. This generalized ideological polarization involves an increase in the dispersion of attitudes with positions moving away from the centre and towards extreme values. Because changes are occurring in relatively abstract general principles or values, dynamics will affect the relationship between attitudes, that is ideological constraint (Converse

1964) and because they are general they will be found across all sub-groups in society, and will not be restricted to partisans. Ideological polarization accounts most frequently argue that elite and partisan polarization are linked because parties respond to changing voter polarization. In this bottom-up version, mass ideological change is usually thought to be driven by long-term social and economic trends, like changing class or racial population structures and extended periods of material security, and by responses to critical events like economic crises (Kitschelt 1994; Inglehart 2018; Abramowitz 2010).

The third account of partisan polarization in the US literature stresses elite cue mechanisms, which also expect ideological change but give partisanship a much more fundamental role in causing this. In short, the elite cue mechanism is that partisan polarization is caused by the ideology of partisans changing, whilst partisan identity and the ideology of non-partisans remains more stable. These mechanisms build on the theory that partisanship is a very stable identity with dynamics governed by psychological and social identity processes, so as parties shift their policy offerings, voters are very likely to update their ideology to match the positions taken up by the politicians they trust (Green, Palmquist, and Schickler 2004; Goren 2005; Zaller 1992). Partisan polarization dynamics are thus driven by processes of 'conflict extension' as polarization moves from elites to partisans who take cues from them (Layman and Carsey 2002; Layman, Carsey, et al. 2010). When polarization and depolarization are driven by elite cue mechanisms we do expect there to be evidence of patterns of real ideological change, but we expect to find these ideological changes mainly in the layer of the population who are receptive to the cue; that is we expect partisans to change ideologially much more than initially ideologically similar non-partisans.

Whilst it is possible that all three mechanisms could be contributing to the observed patterns of partisan polarization, in the USA the debate has revolved around the question of whether polarization is driven purely by party sorting. The central evidence supporting this position is that despite very clear patterns of partisan polarization taking place over decades, there is no evidence of ideological change in long-term cross-sectional data (DiMaggio, Evans, and Bryson 1996; Baldassarri and Gelman 2008). In the US case considerable effort has gone

into looking at a large number of observations relating to many issues over long-term periods because establishing the absence of systematic trends requires precise estimates and because detecting ideological trends in cross-sectional data is anyway difficult. Opponents of the party sorting account have contributed to these debates by providing evidence that they argue shows that partisan polarization arises in part through ideological change mechanisms, but have not claimed that party sorting dynamics are absent.

Scholars examining British politics in these terms have provided unanimous support for the 'pure' party sorting account, that is the view that partisan depolarization is driven entirely by partisanship change, in conditions of ideological stability. The party sorting account fits with the established view of the way in which ideology operates in British politics where, particularly on the redistributive dimension it has long been argued that ideology is 'stable and enduring over time at the individual as well as the aggregate level' (Evans, Heath, and Lalljee 1996; Heath, Evans, and Martin 1994; Bartle 2000, p.120). More recent research on the post-Thatcher period of elite convergence in British politics, using both cross-sectional and panel data, has been more directly inspired by, and explicitly supportive of US party sorting models. Cross-sectional research has concluded that elite depolarization causes important shifts in partisanship but not in ideology, because data from four waves of the British Election Study shows clear partisan depolarization trends, but much more mixed and modest patterns of ideological change (Adams, Green, and Milazzo 2012b; Adams, Green, and Milazzo 2012a). Closely related research using panel data from the depolarization period to model individual level dynamics from cross-lagged regressions also supports party sorting mechanisms (Milazzo, Adams, and Green 2012; Evans and Neundorf 2018). Elite cue ideological change mechanisms are rejected because partisanship has no effect on ideology, but ideology has an effect on partisanship. Ideology also has a stronger effect on partisanship when parties are more polarized (i.e. earlier in the periods under study) which is taken as further evidence that partisan change rather than ideological change is responsible for partisan depolarization. Ideological depolarization mechanisms are also rejected by Evans and Neundorf (2018), who argue that redistributive values should be seen as 'stable aspects

of voters political belief systems' and endorse the conclusion first reached by Adams, Green, and Milazzo that there has been a 'non-convergence of the British public's policy beliefs' because they find very high levels of ideological stability.

3 Issues with the existing literature

Although there is currently a party sorting consensus that partisanship change accounts for partisan depolarization in post-Thatcher Britain, there are reasons to be concerned about both the time-series cross-sectional and the panel evidence supporting this view.

The existing time-series cross-sectional argument for party sorting in Britain comes from finding clear and consistent partisan depolarization trends whilst ideology is stable or at most modestly depolarizing. The fact that two conclusions about ideological trends are left open is concerning because there is an important difference between the ideological stability case and the case where ideology trends with partisan polarization (even if modestly). Party sorting conclusions only follow if ideology is stable. As we will see, apparently modest patterns of ideological change can cause dramatic partisan depolarization even when partisanship is stable.[1] These two possibilities are left open in the British case because trends are much less precisely measured than in the US case, primarily because British conclusions have been based on a data set with at most 24 data points, whilst in the American case analysis involves hundreds or even thousands of data points (DiMaggio, Evans, and Bryson 1996; Baldassarri and Gelman 2008).[2] In addition, existing cross-sectional research on Britain has looked only at the period of depolarization and not at the recent period of polarization. This is despite the fact that the shift in the direction of elite polarization in Britain at the time of the financial crisis, should help identify genuinely associated patterns because trends will all reverse at this point in time, whilst in the American case, where polarization has been increasing for

[1] Aggregate level ideological stability is evidence for partisanship switching mechanisms because then only very unlikely pattens of ideological change produce partisan depolarization (non-partisans have to become more extreme as partisans moderate). If ideology trends with partisan polarization, then many forms of ideological change produce modest ideological polarization and more striking partisan polarization.

[2] Adams, Green, and Milazzo (2012a) compare the first and last of sixteen (for standard deviation and attitude extremism) or twenty-four (for constraint) data points.

over forty years, patterns cannot be distinguished from other linear time trends.

Apparently corroborating arguments using panel data to model individual level dynamics are based on the parameters of cross-lagged panel models alone, even though these parameters are not suitable for adjudicating between ideological depolarization and party sorting mechanisms. Whilst cross-lagged panel models do provide evidence about whether the ideological dynamics of partisans differ from those of initially ideologically similar non-partisans (as expected by elite cue mechanism), as we show in Appendix A, the issue is that they provide ambiguous answers to other questions needed to rule out ideological depolarization; particularly on questions of ideological stability and whether partisanship change or ideological change is primarily responsible for causing partisan depolarization trends. This is because the model parameters describe transition matrices, and the effect of a transition matrix depends on the initial population it operates on. Thus, precisely the same multi-nominal cross-lagged panel model parameters can describe radically different patterns of ideological change, from sharp ideological depolarization (in initially polarized conditions), through ideological stability (in initially equilibrium condition) to ideological polarization (in initially depolarized conditions). For the same reason, the model parameters are ambiguous on the question of whether ideological or partisanship change is responsible for partisan polarization. The same patterns of cross-lag and stability coefficients could describe a situation where changes in partisan polarization are caused primarily by partisanship changes or caused primarily by ideological changes (depending on initial conditions). As we will show, it is possible to produce answers to the questions of whether ideology is stable, depolarizing or polarizing and whether ideological change or partisanship change is responsible for partisan depolarization by supplementing the model parameters with other information (particularly about initial population compositions). However, the existing panel analysis does not do this but rather attempts to make inferences from model parameters alone.

4 Approach and Data

The first concern which we raise about the existing conclusions is that they are based on a narrow evidence base, which generates a small number of observations on a small number of redistributive issues over a short period of time only from the period of depolarizaiton. To address this we use a broader evidence base, giving more observations on more redistributive issues over a longer period of time relating to periods of both polarization and depolarization. The second concern we raised was that cross-lagged panel models provide ambigious answers which are consistent with not just party sorting but also ideological polarization accounts. In order to address this concern we answer a series of three questions, which when combined decide between party sorting, elite cue and ideological polarization accounts, using methods which provide determinate answers to these question. Below we describe the data which we use to obtain the greater number of observations and then the questions and the expectations relating to them which are necessary to decide between the three accounts of depolarization. We describe the methods used to provide unambiguous answers in the subsequent sections dedicated to each question. At the end of each section we also directly compare our findings with results of previous analysis.

Our approach to measuring ideological trends follows that of Baldassarri and Gelman (2008), who study polarization in general using as wide a range of political attitudes as possible. Hence we study redistributive polarization and depolarization using as wide a range of redistributive attitudes as possible. We use data from the three long-running surveys which provide longitudinal evidence about the relationship between redistributive ideology and partisanship in Britain since the 1980s. Our primary evidence for establishing long-term trends comes from the British Social Attitudes Survey (BSAS), because this provides nationally representative information about party identification and redistributive attitudes for almost every year since 1983. The BSAS includes 17 questions about redistributive attitudes have been asked three times or more in both the period of elite depolarization from 1983-2007 and the period of repolarization from 2007 onward, and where five of these attitudes constitute a widely used and validated redistributive attitude scale (Evans, Heath,

and Lalljee 1996). This data set contains 102,858 observations in 32 survey waves.

The theories we are investigating link aggregate trends over long periods of time to individual level mechanisms, which we will investigate using panel data in the final parts of our analysis. To link to this and to address the potential concern that aggregate level ideological trends are driven by changes in population composition (generational replacement) not individual level ideological dynamics (Inglehart 1997) we use the British Household Panel Survey (BHPS) which asked a six-item redistributive scale in seven waves between 1991 and 2007 (Heath, Evans, and Martin 1994). We analyse the 4636 respondents from the BHPS who answered all seven of these waves, so the composition of the sample in all waves is identical. By looking at long-term trends where population composition is held constant we eliminate the possibility that those trends are driven by changes in population composition this will show that trends are linked to individual level mechanisms.

In order to compare our findings with previous research, our analysis also includes the four redistributive questions from the four waves of the British Election Study data 1987-2001 used by Adams, Green, and Milazzo (2012a) to argue for party sorting conclusions. This data is a composite of nationally representative and fixed composition data because it takes three waves of cross-sectional data and puts this together with the final wave of a three wave panel. This data set contains 11,260 observations in four survey waves.

Further details including the wording of the 27 redistributive questions asked in these three surveys can be found in Appendix B. To facilitate interpretation we recode all of these so that the scale runs from a minimum of zero to a maximum of 1 and make the most pro-redistributive position 1 on the scale. Whilst all these questions concern redistributive values, there are potentially important differences between them.[3] The multi-level modelling approach we use addresses this potential heterogeneity by not only estimating average trends, but also the variability in trends. This varibility in trends indicates whether average trends result from all issues trending together, or whether there is a large variation in trends across issues.

[3]For example, the BES asks self-placement questions (eleven response points), whilst the BSAS and the BHPS mainly ask agree-disagree questions (five response points).

All three surveys also include a very similar measure of partisan identification which asks respondents if they identify with a political party, and if not if they are closer to one of the parties. Following standard practice we treat those who identify with or feel closer to a party as party identifiers. We code Labour partisanship as 1, and Conservative partisanship as 0 treating all other values as missing.

The series of three questions which we use to decide between the theories is as follows: First, we ask whether ideological trends are associated with partisan and elite polarization trends. Second, we ask whether partisan polarization is primarily caused by ideological or partisanship change. Finally, we ask whether any ideological convergence patterns differ between partisans and initially ideologically similar non-partisans. The party sorting expectations is that ideology is stable, so we will not find ideological changes associated with elite and partisan polarization, and that partisanship change rather than ideological change is the primary cause of partisan depolarization. The ideological depolarization and elite cue mechanisms share the expectation of ideological change, so we will observe that ideology does move with elite and partisan polarization. Elite cue mechanisms expect depolarization to be much greater amongst partisans, so we will find that ideological convergence is much more pronounced amongst partisans than initially ideologically similar non-partisans. However, ideological polarization accounts expect ideological convergence amongst partisans and non-partisans alike.

5 Was ideological polarization associated with elite and partisan polarization?

The question of whether ideological trends match partisan (and elite) polarization trends is a well established one, and we make use of well established methods to study it, our contribution comes from analysing the data described above with many more observations over a longer time period, where this data encompasses that used in previous analysis.

We follow Baldassarri and Gelman (2008) by measuring partisan polarization with the

(Pearson) correlation coefficient between ideological attitudes and partisanship. With a binary measure of partisanship this provides a scaled measure of the ideological gap between the partisans. We follow Adams, Green, and Milazzo (2012a) in the three measures of ideological polarization we use. The first two of these are measures of dispersal, attitude standard deviations and attitude extremism (the proportion of responses falling into either of the extreme categories on the scale). The final measure examines attitude constraint with the (Pearson) correlation coefficient between two attitudes making up an attitude pair. All attitudes are included in the partisan polarizatoin and constraint analysis but as in Munzert and Bauer (2013) we exclude short scales (three categories or less) from the analysis of dispersal.

5.1 Was partisan polarization associated with elite polarization?

All three mechanisms expect that the ideological gap between partisans will be greater when parties are polarized, so if partisan polarization is not associated with elite polarization then none of the mechanisms can be functioning as expected. We begin our analysis by checking this common expectation that partisan polarization in Britain did decline during the period of elite depolarization and then increase during the period of elite polarization.

To test for trends in these coefficients, Baldassarri and Gelman (2008) introduced the use of varying intercept, varying slope multi-level models, using time in decades as a proxy for increasing polarization. The dependent variable is the survey wave correlation between attitude i and partisanship in year t, y_{it}. Fomally:

$y_{it} = \alpha_i + \beta_i t + \epsilon_{it}$

The second-level unit is the attitude. Our primary interest is in the overall trend β, that is the model estimated mean of β_i.[4] In the British case there was depolarization to 2007 and repolarization after this date, so we fit separate models to the data for the period up to 2007 and the period from 2007-16, with the primary expectation of downward trends to 2007, and so a negative β, and upward trends after 2007, and a positive β. This gives our first hypothesis:

[4]Models are fit using `Stan` via `RStanarm`.(Stan Development Team 2016)

H1 Partisan polarization is associated with elite polarization.

We move immediately to test this hypothesis. Figure 2, following Baldassarri and Gelman (2008), plots the data and trend lines which are later summarized in regression form. The general purpose of these plots is to provide reassurance that results are not artefacts of the model but are driven by important features of the data. However, in this first instance we also use this figure to provide a futher explanation of the model parameters. The figure is split into 27 facets, one for each of the attitudes we are studying. Within each facet we plot the data, that is each point in the figure represents a survey wave correlation between that attitude and a Labour-Conservative partisanship dummy variable. Some facets have more points than others because some questions were asked more often, for example the BHPS redistribution questions were only asked seven times all in the period 1991-2007 and the BES redistribution questions were only asked four times in the period 1987-2001. Partially pooling the evidence, which is particularly consequential for attitudes where there is little evidence, the model fits a regression line to the data for each attitude (separately for the period of depolarization and the period of repolarization) and the median estimate of each of the 27 regression lines is plotted on the figure. Fit lines which have a median negative slope are coloured red, and fit lines which have a median positive slope are coloured blue.

	ρ = attitude × partisanship				
		1983-2007			2007-2016
	All Surveys	BSA	BHPS	BES	BSA
Intercept	0.41 (0.03)	0.35 (0.03)	0.56 (0.02)	0.46 (0.05)	-0.06 (0.03)
Time (decades)	-0.09 (0.01)	-0.07 (0.01)	-0.16 (0.02)	-0.10 (0.03)	0.10 (0.02)
Residual SD:					
Intercepts	0.15	0.14	0.04	0.10	0.10
Trends	0.06	0.05	0.05	0.06	0.05
Data	0.04	0.04	0.04	0.05	0.03
N	357	299	42	16	158
Groups	27	17	6	4	17

Table 1: Results of Multi-Level Models With Dependent Variable as Attitude Partisanship (Correlation of Attitude with Labour (v. Conservative) Partisanship) in Period 1983-2007 and 2007-2016. Models show results across all three surveys and in each survey independently.

This evidence is summarized in the regression table in Table 1 which also breaks the

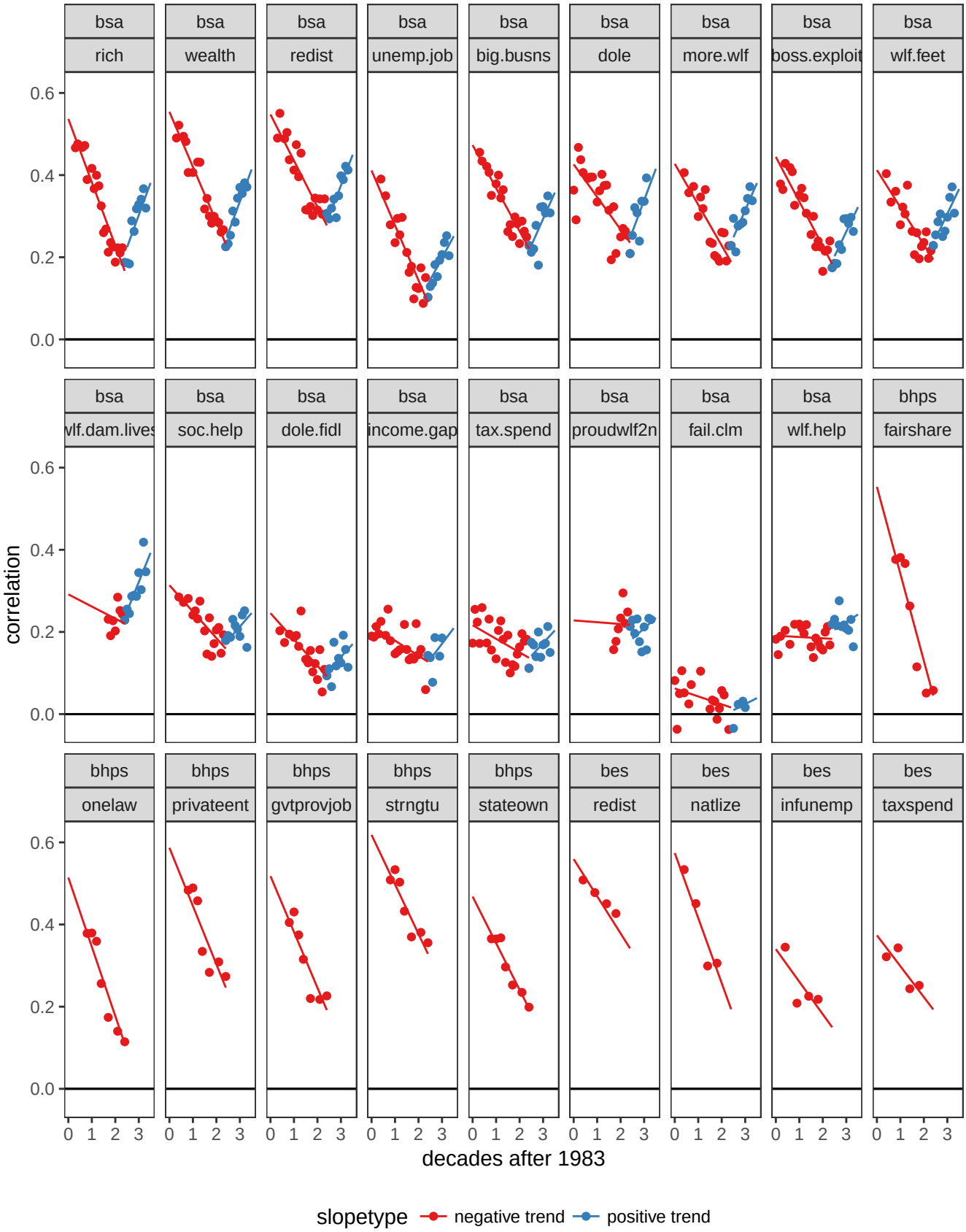


Figure 2: Trends in Partisan Depolarization and Repolarization in the Redistributive Attitudes in the BSAS, the BHPS and the BES. For the survey questions relating to each facet see appendix B.

results down by survey. The key coefficient of interest is the coefficient on time in decades, measured here in decades after 1983. The first model in the table provides a summary across all twenty-seven attitudes in all three surveys in the period 1983-2007. The intercept .41 (SE: .03) indicates the average correlation between redistributive attitudes and partisanship in 1983, when time was 0, and the SD on intercepts of .15 indicates that about two-thirds of the intercepts will fall between .56 (=.41 + .15) and .26 (=.41 - .15). Our central interest is in the coefficient on time in decades of -.09 (SE: .01) indicates that on average the correlation between partisanship and redistributive attitudes declined by .09 per decade, or by .23 in the twenty-four year period between 1983 and 2007. The SD of .06 on trends is informative about the distribution of trends around this average, with 95% of trends modeled to fall in the range -.21 and +.03 (i.e. within about two standard deviations of the mean). This significant negative trend is seen in the data overall, and also in the three surveys individually. In the period after 2007, when we only have BSAS data, there is a clear positive average trend of +.10 (SE: .02) per decade with a SD of .05, this indicates that not only is there a clear average trend of partisan polarization but that polarization is expected to occur on the overwhelming majority of redistributive attitudes.

Overall, we find a clear negative coefficient on time in the period of depolarization and a clear positive coefficient on time in the period of repolarization. This is strong evidence in support of H1 that partisan polarization is associated with elite polarization.

5.2 Was ideological polarization associated with elite polarization

The central difference between ideological polarization and elite cue theories on the one side and party sorting accounts on the other is that the former two mechanisms create expectations that elite and partisan polarization is accompanied by systematic ideological change, in the form of ideological polarization. On the other hand, if patterns of ideological stability are found this is a key piece of evidence for party sorting arguments. To examine whether party polarization is associated with real ideological change, we examine whether there were decreases in attitude extremism, attitude standard deviations and attitude constraint during

periods of elite and partisan depolarization and increases in these measures during periods of elite and partisan polarization. To analyse the three different aspect of ideological polarization we fit separate models where y_{it} is in turn first, the proportion of extreme attitudes in issue i at time t, second, the standard deviation of issue issue i at time t and then finally the correlation between issue pair i at time t. In each case we fit separate models to the period of elite depolarization, where we have measures from the three different surveys, and repolarization, where we only have data from the BSAS, with the expectation of significant negative coefficients on time for the period 1983-2007 and significant positive coefficients on time the period 2007-16. This enables us to test our second hypothesis:

H2 Ideological polarization is associated with elite polarization.

	1983-2007 (surveys combined)			2007-2016 (BSAS only)		
	extreme	σ	constraint	extreme	σ	constraint
Intercept	0.24 (0.02)	0.21 (0.01)	0.25 (0.01)	0.04 (0.01)	0.18 (0.00)	0.07 (0.02)
Time (decades)	-0.04 (0.01)	-0.01 (0.00)	-0.03 (0.00)	0.04 (0.01)	0.01 (0.00)	0.05 (0.00)
Residual SD:						
Intercepts	0.11	0.03	0.15	0.02	0.01	0.19
Trends	0.02	0.01	0.03	0.02	0.00	0.03
Data	0.03	0.01	0.03	0.01	0.01	0.03
N	275	275	2124	130	130	1176
Groups	23	23	157	13	13	136

Table 2: Results of Multi-Level Models of Ideological Depolarization with Dependent Variable as proportion of extreme responses, standard deviation of responses, constraint between attitude pairs in Period 1983-2007 and 2007-16.

We again move directly to test this hypothesis. The results, summarized in Table 2, show a consistent pattern across all three measures of ideological change. For the period of depolarization we find significant negative trends in extreme values (-.04, SE: .01), standard deviations (-.01, SE: .00) and constraint (-.03, SE: .00). For the period of repolarization we find significant positive trends in extreme values (.04 SE: .01), standard deviations (.01 SE: .00) and constraint (.05 SE:.00).

For the period of elite depolarization where we have three surveys to compare, trends are consistent across surveys. As we show in Appendix C, significant negative trends are

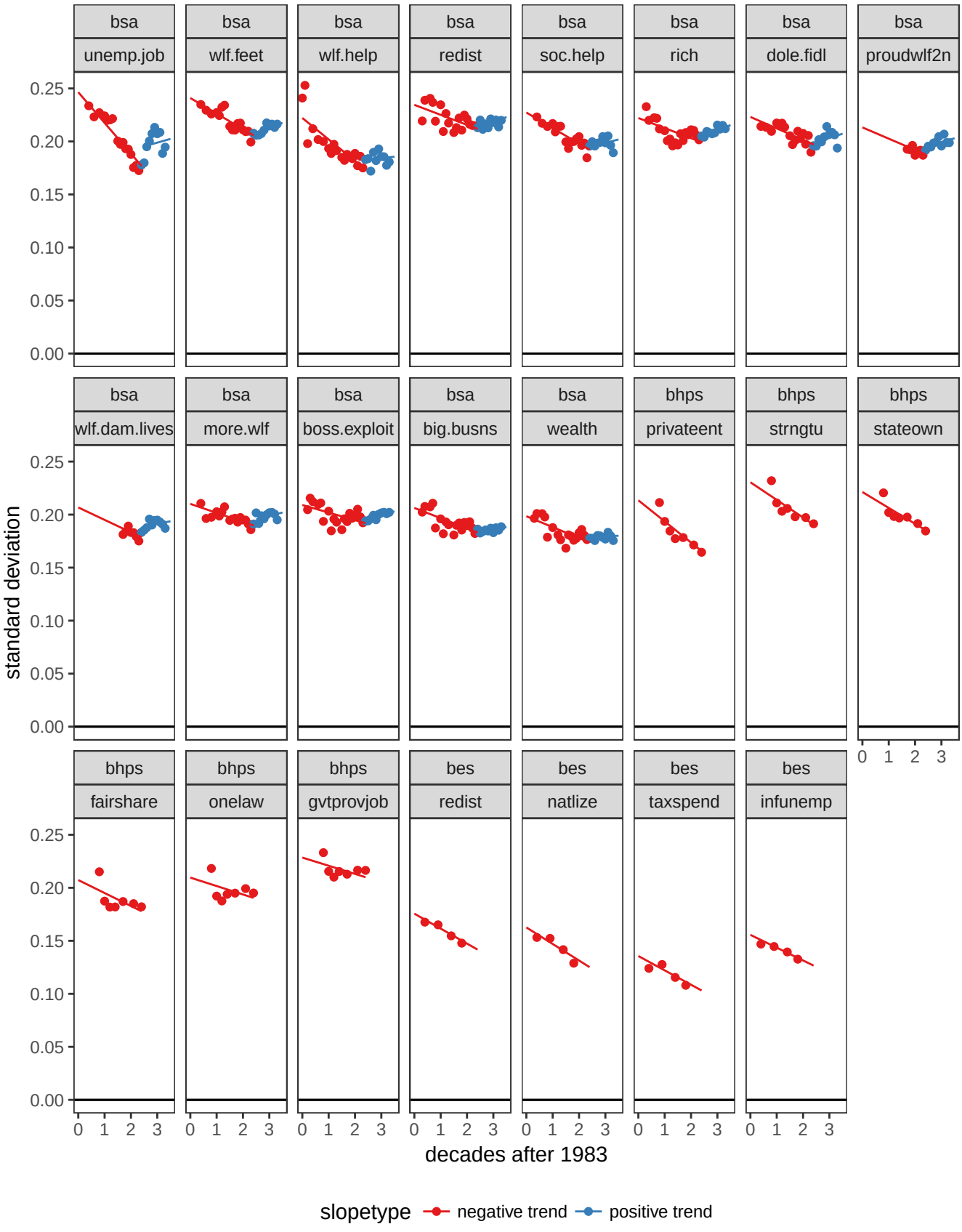


Figure 3: Trends in Standard Deviation of Redistributive Attitudes, 1983-2007 and 2007-2016

found on all three measures of ideological change in the BSAS alone and the BHPS alone. The trends in the BES data alone are negative for all three measures, but only statistically significant for standard deviations.

Figure 3 shows the relationship between regression trends and the underlying data for case of standard deviations. We plot only this case for reasons of space, displaying standard deviations not just because they are perhaps the most natural of the three measures of polarization, but also because the trends (and the directional shifts in 2007) are of the smallest magnitude, and so are the least likely to be graphically observable. We provide similar plots for extreme values and attitude constraint trends in Appendix C.

Overall, finding declining ideological polarization during the period of elite and partisan depolarization, and increasing ideological polarization during the period of elite and partisan polarization is clear evidence that ideological polarization is associated with elite and partisan polarization. We note additionally that this pattern cannot be explained solely by changing population composition; for the period when both sets of data are available, we find the same pattern in both the nationally representative BSAS and the BHPS looking at the same sample of individuals in each wave. We conclude therefore that there is substantial evidence of ideological change at the aggregate and individual levels and that this real ideological change is associated with elite and partisan polarization.

5.3 Relationship to previous findings

How does this conclusion, that ideological polarization is associated with elite and partisan polarization, relate to existing conclusions based on panel data and time-series cross-sectional patterns?

Our findings of ideological depolarization in the BHPS directly contradicts the conclusion of aggregate level ideological stability drawn in Evans and Neundorf (2018) from panel data despite analysing the same data set. Table 3 reproduces the cross-lagged model parameters in their transition matrix form. Evans and Neundorf make the inference that there was no ideological convergence and that ideology was 'very stable' simply from the large transition

	Ideology [t-1]		
[t]	Centrist	Leftist	Rightist
Centrist	.97	.13	.07
Leftist	.02	.87	.00
Rightist	.01	.00	.93

Table 3: Estimated Transition Matrix of Latent Class Model (Source: Calculated from Evans and Neundorf (2018) Table 1)

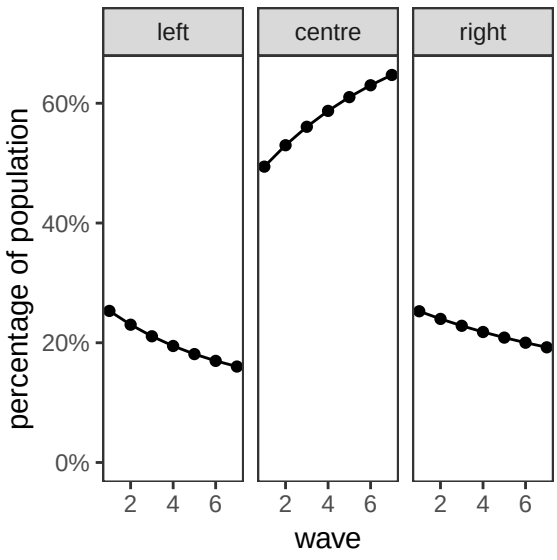


Figure 4: Projected growth in centrist ideological group and declines in size of left and right ideological groupings from model in Evans and Neundorf (2018).

probabilities on the matrix diagonal. In the introduction we pointed out that the parameters of multi-nominal cross-lagged panel models alone do not generally determine whether ideology is stable or depolarizing, this is because they generally determine an equilibrium condition and move the population composition towards this. The transition matrix in Table 3 has a very depolarized equilibrium (77% centrist, 12% leftist and 11% rightist) and will cause ideological depolarization in any initial population more polarized than the equilibrium. Figure 4 shows the ideological trends caused by this matrix from the initial conditions that result in the seven wave aggregate population composition reported in Evans and Neundorf (58% centrist, 20% leftist, 22% rightist). There is a clear pattern of ideological depolarization from 1991 to 2007 with centrism increasing (from 49% to 65%), leftism declining (from 25% to 16%) and rightism declining (from 25% to 19%). This shows, contrary to the explicit conclusion in Evans and Neundorf (2018), that multi-nominal cross-lagged panel analysis also implies a substantial trend of ideological depolarization between 1991 and 2007.

Previous time-series cross-section research using BES data only from the period of elite depolarization argued for party sorting mechanisms because ideology was stable or at most modestly depolarizing whilst there was a clear pattern of partisan depolarization (Adams, Green, and Milazzo 2012a). Our results refine this picture by showing that during the period of elite depolarization ideology was not stable but rather depolarized significantly and extend this picture by examining a longer time-period which includes the period of elite repolarization, where we find clear and consistent pattterns of partisan and ideological repolarization. The extension has significance, because the common reversal of direction in trends in the mid-2000s helps establish that the patterns we describe are connected rather than just being unconnected uni-directional trends and it reinforces the case first made by (Adams, Green, and Milazzo 2012a) that polarization and depolarization can be thought of as mirror images. The refinement has significance because showing that there are patterns of systematic ideological change means that party sorting conclusions are not implied. In the presence of ideological change partisan depolarization patterns could come either from partisanship or ideological change. Thus, further evidence is needed to decide whether partisanship changes

or ideological changes cause partisan polarization.

6 Was partisan depolarization caused by ideological or partisanship change?

Given that we have found a pattern of ideological change we now ask whether this ideological change or partisanship change was responsible for partisan depolarization. To do this we use the panel data which is of exceptionally long duration with seven waves over sixteen-years of partisan depolarization, from 1991 to 2007. To examine whether partisanship change or ideological change caused partisan depolarization we exploit this unusual data to compare two 'counterfactual' partisan polarization trends, to the observed pattern of partisan polarization.

The first counterfactual trend describes what would have happened to partisan polarization if people had changed only their partisanship, keeping their ideology stable. We label this 'fixed ideology depolarization'. Fixed ideology depolarization describes the partisan depolarization trend which arises from partisanship change alone. If the party sorting mechanism of partisanship change is the main cause of partisan depolarization then we would expect very little difference between the observed pattern of partisan depolarization and fixed ideology depolarization, whilst if ideological change is necessary to explain partisan depolarization then we would expect these differences to be large.

The second counterfactual trend describes what would have happened to partisan polarization if people had changed only their ideology keeping their partisanship stable. We label this 'fixed partisan depolarization'. Fixed partisan depolarization describes the partisan depolarization which arises from ideological change alone. If ideological change (through either elite cue or ideological depolarization mechanisms) is primarily responsible for partisan depolarization then we would expect very little difference between the observed pattern of partisan depolarization and fixed partisan depolarization, whilst if partisanship change is necessary to explain partisan depolarization we would expect these differences to be large.

We construct the fixed ideology trend by measuring the ideological gap at a fixed point in

time (the initial wave) between partisans in each wave (that is we take the correlation between partisanship in each wave and ideology in the 1991 survey wave). Measuring ideology at a fixed point in time means there is no change in ideological positions, only in the composition of the partisan groups.

We construct the the fixed partisanship trend by measuring the ideological gap in each wave between the group of partisans in the initial wave (that is we take the correlation between partisanship in the 1991 wave and ideology in each wave). This fixes the composition of the group of individuals we examine, leaving only ideological change to cause trends.

We test these expectations using an extension of the multi-level model used in H1, where the coefficient on time measures the observed partisan depolarization trend, which becomes the baseline coefficient on time in this model. We use a data set containing the observed, the fixed partisan and fixed ideology survey wave correlation coefficients where dummy variables indicates whether the partisanship or the ideological measure is fixed in its 1991 state. Our primary interest is in the interaction between these dummy variables and time, which gives the difference between the observed depolarization trend and fixed ideology depolarization and fixed partisan depolarization respectively. This gives two hypotheses:

H3a Ideological change is required to explain partisan depolarization: the observed trend of partisan depolarization is negative and substantially larger in magnitude than fixed ideology depolarization.

H3b Partisan change is required to explain partisan depolarization: the observed trend of partisan depolarization is negative and substantially larger in magnitude than fixed partisan depolarization.

The evidence on this is found in Figure 5 and is summarized in regression Table 4. The figure plots observed partisan depolarization (grey) together with the fixed ideology (top panels in black) and the fixed partisanship (bottom panels in black) depolarization trends. The basic pattern evident in this plot shows that ideological change is more important that partisanship change because the observed pattern more closely resembles fixed partisan

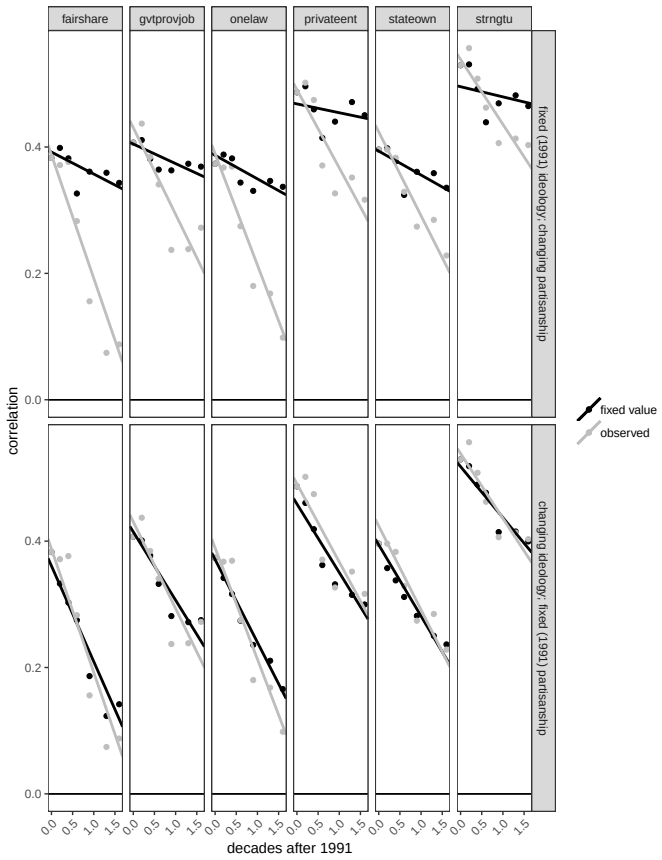


Figure 5: Partisan depolarization mechanisms in the BHPS 1991-2007 data. Observed patterns of partisan depolarization together with fixed ideology depolarization and fixed partisan depolarization. The grey data shows the observed patterns in each survey wave. The black data show the position if either ideology (in the top row) or partisanship (in the bottom row) is held at its 1991 value.

	ρ = attitude × partisanship
Intercept	0.44 (0.02)
Time (decades)	-0.14 (0.01)
fixed ideology	-0.02 (0.03)
fixed partisanship	-0.02 (0.03)
Time × fixed ideology	0.12 (0.02)
Time × fixed partisanship	0.03 (0.02)
Residual SD:	
Intercepts	0.06
Trends	0.03
Data	0.03
N	126
Groups	18

Table 4: Results of Multi-Level Models With Dependent Variable as Correlation between Redistributive Attitude and Partisanship in the BHPS 1991-2007. The models show trends in the observed data, stable (1991) ideology, stable (1991) partisanship and with dummy variable indicating the condition.

depolarization (where only ideology change) than fixed ideology depolarization (where only partisanship changes). This is formally tested with H3a and H3b using Table 4.

Hypothesis 3a, that ideological change is required to explain partisan depolarization, is tested with the expectation of a large positive interaction between the fixed ideology dummy variable and time. The difference between the fixed ideology trend and the observed depolarization trend, expressed by this coefficient (.12; SE .02), is positive, substantively large relative to the observed depolarization trend (-.14; SE .01) and is statistically significant. Indeed it indicates that without ideological change partisan depolarization would have been about -.02 per decade rather than -.14, so about 85 per cent of the observed depolarization would not have occurred. The evidence leads us to accept H3a, the observed trend of partisan depolarization is much greater in magnitude than the fixed ideology depolarization trend, holding ideology constant makes a very large difference to the observed pattern of ideological convergence. Contrary to party sorting expectations, ideological change is required to explain the observed pattern of partisan depolarization.

Hypothesis 3b, that partisanship change is required to explain partisan depolarization, is tested with the expectation of a large positive interaction between the fixed partisanship

dummy variable and time. In Table 4, the difference between the large observed depolarization trend and the fixed partisanship trend, expressed by the fixed partisanship interaction with time, is small and statistically not significant (.03; SE .02). This indicates that without partisanship change the estimated depolarization trend would have been -.11 which is close to (indeed not significantly different from) the observed depolarization trend of -.14. This evidence leads us to reject H3b, the observed trend of partisan depolarization is not much greater in magnitude than fixed partisanship depolarization, holding partisanship constant makes only a very small difference to the observed pattern of ideological convergence. Contrary to party sorting expectations, partisanship change is not required to explain partisan depolarization.

This finding, that ideological change not partisanship change was the primary cause of partisan depolarization directly contradicts the claim in Evans and Neundorf (2018) that partisanship change was the main cause of partisan depolarization. As in the case of ideological depolarization, the issue is that no inferences about this matter can safely be made using the method in Evans and Neundorf (2018) of looking at model parameters alone, information about initial sample compositions is also required. In appendix A.2 we show that once this additional information is used cross-lagged panel analysis also implies that ideological change and not partisanship change was primarily responsible for partisan depolarization.

7 Did partisanship cause depolarization?

Finally, we examine the elite cue claim that partisanship causes ideological depolarization so that partisans change their ideology much more dramatically than initially ideologically similar non-partisans. We do this by comparing the ideological convergence of partisans to the ideological convergence of an initially ideologically similar group of non-partisans. In the initial wave of the survey we match non-partisans and partisans ideologically. We use matching methods to find a group of initially leftist non-partisans whose ideological distribution matches that of the Labour partisans in 1991, and a group of initially rightist non-partisans whose ideological distribution matches that of the Conservative partisans in

1991.[5] We have already seen in H3b above that there is substantial convergence between partisans.[6] The elite cue expectation is that the magnitude of the ideological convergence amongst the partisans will be much greater than the magnitude of convergence amongst the matched non-partisans.

We measure the ideological gap between the non-partisan groups, which we call matched non-partisan depolarization, with the correlation between a leftist dummy variable (with initially-leftist non-partisans coded 1 and initially rightist non-partisans as 0) and each redistributive attitude in each survey wave. We compare fixed partisan depolarization to the matched non-partisan depolarization, using a data set which combines the survey wave correlation coefficient measuring fixed partisan depolarization with the survey wave correlation coefficients matched non-partisan depolarization. A dummy variable indicates whether the coefficient relates to the partisans. Our primary interest is the interaction between the partisan dummy variable and time which gives the difference between fixed partisan depolarization and matched non-partisan depolarization.

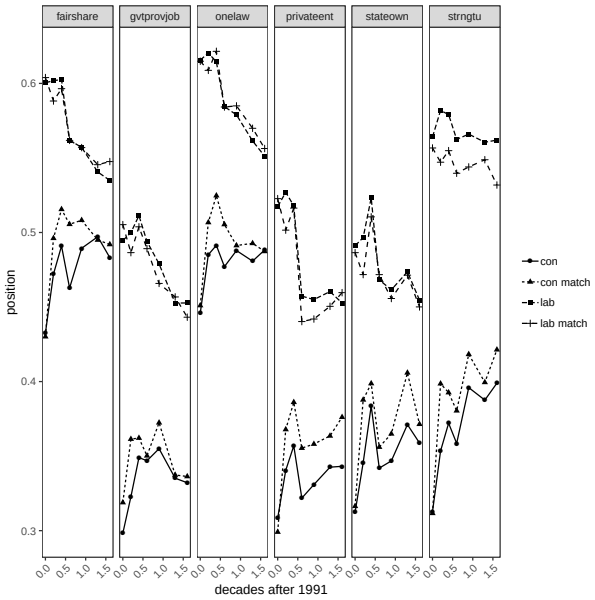
H4 Ideological depolarization is more pronounced amongst partisans than initially ideological similar non-partisans.

The evidence on this question is shown in Figure 6 and summarized in Table 5. Figure 6a shows the mean position of the initially left- and right-wing non-partisans in each of the survey waves, it also shows the trajectory of the group of initially Labour and Conservative partisans. We include these mean plots to increase confidence that the matching is working as expected. In particular, the small differences between the partisan and matched group means in 1991 provides visual confirmation of matching success.[7] Figure 6b plots the key evidence

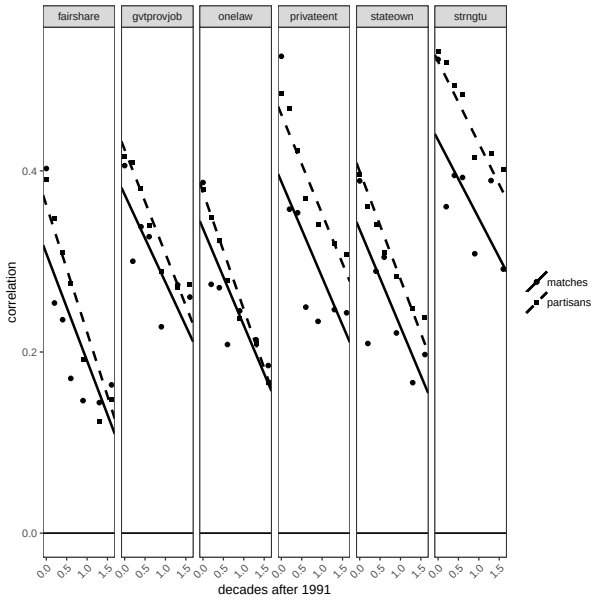
[5] We use the matching methods described in (Ho et al. 2007) and the associated `MatchIt` package in `R` to predict initial partisanship from initial ideology using logistic regression and then select non-partisans from the initial wave of the BHPS who have the same distribution of expected Labour partisanship and Conservative partisanship as the actual partisans. Matching balances treatment and control groups, any method not involving post-treatment variables, which achieved this balance would be appropriate and the matching method plays no further role in the analysis. The diagnostic of matching success is balance between groups.

[6] In appendix D.1 we also show that there is evidence of ideological depolarization in the fixed group of partisans and the fixed group of non-partisans.

[7] A more formal assessment of the balance is provided in appendix D.2.



(a) Initial wave Labour and non-partisan leftist and Conservative and non-partisan rightist mean ideological positions in each survey wave.



(b) Partisan depolarization (measured by partisanship/ideology correlation) in fixed groups of partisan (based on initial partisanship) and depolarization between ideologically matched groups of non-partisans.

Figure 6: Ideological depolarization in the BHPS 1991-2007. Ideological trajectories of partisans and non-partisans matched on initial ideological position. Showing ideological trajectories of fixed groups of initial Labour and initial Conservative partisan and of fixed groups of non-partisans with initial ideology matching the ideology of the initial Labour and Conservative partisans.

	ρ = attitude × Labour or left non-partisan partisans and ideologists
Intercept	0.36 (0.02)
Time (decades)	-0.10 (0.02)
partisans	0.06 (0.04)
Time × fixed partisanship	-0.01 (0.02)
Residual SD:	
Intercepts	0.06
Trends	0.03
Data	0.04
N	84
Groups	12

Table 5: Results of Multi-Level Models With Dependent Variable as Correlation between Redistributive Attitude and Fixed Group Partisanship and Ideologist Dummy Variables in BHPS 1991-2007.

of interest, the convergence between both the partisans (dashed line) and the matched non-partisan (solid line). The elite cue expectation is that the negative trend indicating partisan ideological convergence will not be shared by the matched non-partisans. In the regression table describing this data in Table 5 the central elite cue expectation is of a large negative interaction between the matched non-partisan dummy variable and time. Visually the plots suggest that the systematic pattern of convergence for both groups is about the same, and this is summarized statistically in the model, where the -.01 (SE: .02) coefficient on the relevant interaction is small and statistically insignificant. We therefore reject H4, with the finding that ideological convergence took place amongst partisans and non-partisans alike.

This finding, that the ideological trajectories of partisans and non-partisans are similar, is in agreement with the claim in Evans and Neundorf (2018) that partisanship has little impact on ideology. However, they describe this pattern as similar ideological stability. In Appendix A.3 we show that their cross-lagged panel parameters when combined with information about initial conditions agrees with our description that the ideology of partisans and initially ideologically similar non-partisans converged substantially, with convergence at an approximately equal rate.

8 Discussion and Conclusion

Since the financial crisis, British political parties have been polarizing again after decades of convergence on redistributive ideology. Party sorting accounts, which stress ideological stability and argue that partisan polarization results from partisanship change, provide the existing basis for understanding how these elite polarization dynamics connect to public opinion. However, elite cue and ideological depolarization accounts, which are prominent in the broader polarization literature, have not been sufficiently examined in the British context. In this article we answered three questions which enabled us to choose between party sorting, elite cue and ideological polarization accounts of polarization dynamics. We examined first, whether ideology trends with elite and partisan polarization, second, whether partisan polarization was caused by ideological or partisanship change and finally whether any ideological trends were found predominantly in partisans. We found that ideological polarization was associated with elite and partisan polarization (accept H1 and H2), that ideological change was required (accept H3a) and partisanship change was not required (reject H3b) to explain the observed pattern of partisan depolarization, and that ideological convergence occured amongst partisans and initially ideological similar non-partisans alike (reject H4). We rejected party sorting mechanisms because ideology was not stable and partisan depolarization did not primarily occur through changing partisanship. We also ruled out elite cue mechanisms, and thus the most prominent account of elite polarization causing ideological polarization, because we found virtually identical ideological convergence amongst partisans and initially ideologically similar non-partisans. We therefore endorsed an ideological polarization account of citizen ideological dynamics in Britain.

What are the implications of these findings for the study of polarization dynamics? We have presented evidence of a relationship between ideological change and elite polarization. The absence of this relationship is used by party sorting theorists to argue that elite polarization is caused by intra-elite dynamics and that parties cannot shape citizen ideology. We have also presented evidence that the relationship between elite and ideological polarization is not the result of partisans distinctively following parties to new ideological positions. This

rules out the two most commonly found accounts of partisan polarization: party sorting and elite cue accounts. Both of these accounts are elite driven.

Although we reject the two most common elite driven accounts of partisan polarization, we recognise that other elite driven explanations remain possible. We have shown that if elite polarization does cause mass polarization, it does so through a mechanism which has an effect on partisans and non-partisans alike. This could arise because ideological cues are not coming from parties but from another elite group, perhaps from the news media or social movements. It is also possible that the ideological signals do originate with parties, perhaps with them changing the national conversation. This latter case would imply that parties cause general ideological changes, so we would need to replace the party sorting view that parties cannot affect citizen ideology, with its opposite, that parties have a very extensive effect on ideology which runs across the whole population. Either way, as has been pointed out in the American context, an account where ideological signals from elites substantially shift the ideology of citizens provides a challenge to the whole spatial modeling framework (Carsey and Layman 2006).

Another possibility is that elite polarization is driven from the bottom-up by ideological polarization and that parties are responding to these changes. This bottom-up account is usually taken to be the implication of ideological polarization arguments in the US (Abramowitz 2010; Abramowitz 2013). Although we have not tested the mechanisms, we consider what could have led to such bottom-up ideological change in Britain by indicating a possible process. The declining size and organization of the manual working class and the increasing size of the salariat would be expected to weaken the group identities traditionally thought of as being most generative of redistributive ideology (Evans and Tilley 2017; Kitschelt 1993). In addition, the extended period of economic growth from the early 1990s reduced the salience of many of the trade-offs relating to redistributive ideology (increased welfare spending did not automatically imply increased taxation), further contributing to ideological depolarization (Clarke 2009). These economic trends reversed with the 2007/8 financial crisis, which sharply increased the salience of redistributive ideological trade-offs and may also have re-

oriented group identity dynamics (Whiteley et al. 2013). Thus, if redistributive ideology emerges as conventionally described, out of group identities and material interests, where material interests are a stronger determinant in conditions of economic adversity, then there are reasons to expect the depolarization and repolarization patterns we have described in this article. If a bottom-up account is accepted it would provide an explanation for prominent aspects of recent elite polarization dynamics in Britain which can be hard to explain from a top-down perspective. In particular, given Labour MPs' views of Jeremy Corbyn, it is difficult to see the leftward shift associated with his election as leader as a strategic move by party elites, rather than a bottom-up process.

Further research is needed to decide between the bottom-up and alternative top-down possibilities. However, either case requires a substantially new account of elite polarization dynamics in Britain.

Our findings also have implications for the understanding of the dynamics of redistributive ideology beyond the observation that they are related to elite polarization. We demonstrated that substantial ideological change took place at the individual level. This challenges the standard model of individual level stability in redistributive ideology (after it has been formed when young through socialisation). This implies that, and indeed we have presented a case where, substantial changes in the ideological structure of society can occur without the generational replacement which is usually the specified mechanism of aggregate level ideological change (Inglehart 1997). Our demonstration that ideological change caused partisan depolarization in the post-Thatcher years also leaves a number of substantive arguments about British political dynamics in need of reassessment, in particular party sorting assumptions to the contrary play a central role in recent accounts of the decline of class voting (Evans and Tilley 2012; Evans and Tilley 2011; Evans and Tilley 2017).

In comparative terms our findings also challenge the claim that ideological change is unlikely ever to found in any case of elite polarization, which was taken to the comparative implication of finding ideological stability in the extreme case of depolarizing Britain. We do not suggest that there are general expectations in the opposite direction; that party system

change will always be associated with ideological change and that partisan polarization will always be caused by ideological change more than partisanship change. However, closely related patterns of ideological change have been found in Holland and Germany (Munzert and Bauer 2013; Adams, de Vries, and Leitner 2012). Understanding these patterns of ideological change in a comparative perspective therefore seems an important direction for future research.

References

Abramowitz, Alan (2010). *The Disappearing Center: Engaged Citizens, Polarization and American Democracy*. Yale University Press.

— (2013). *The Polarized Public: Why American Government is So Dysfunctional*. New York: Pearson.

Abramowitz, Alan I and Kyle L Saunders (1998). "Ideological realignment in the US electorate". In: *Journal of Politics* 60, pp. 634–652.

— (2008). "Is polarization a myth?" In: *The Journal of Politics* 70.02, pp. 542–555.

Adams, James, Catherine E de Vries, and Debra Leitner (2012). "Which Subconstituencies Reacted to Elite Polarization in the Netherlands? An Analysis of the Dutch Publics Policy Beliefs and Partisan Loyalities, 1986–1998". In: *British Journal of Political Science* 42.1, pp. 81–105.

Adams, James, Jane Green, and Caitlin Milazzo (Nov. 2012a). "Has the British Public Depolarized Along With Political Elites? An American Perspective on British Public Opinion". In: *Comparative Political Studies* 45.4, pp. 507–530.

— (2012b). "Who moves? Elite and mass-level depolarization in Britain, 1987–2001". In: *Electoral Studies* 31.4, pp. 643–655.

Bakker, Ryan et al. (2015). "Measuring party positions in Europe: The Chapel Hill expert survey trend file, 1999-2010". In: *Party Politics* 21.1, pp. 143–152.

Baldassarri, Delia and Andrew Gelman (2008). "Partisans without constraint: Political polarization and trends in American public opinion". In: *American Journal of Sociology* 114.2, pp. 408–446.

Bale, Tim (2017). *The Conservative Party: From Thatcher to Cameron*. John Wiley & Sons.

Bartle, John (2000). "Political awareness, opinion constraint and the stability of ideological positions". In: *Political Studies* 48.3, pp. 467–484.

Campbell, James E. (2016). *Polarized: making sense of a divided America*. Princeton University Press.

Carsey, Thomas M. and Geoffrey C. Layman (2006). "Changing Sides or Changing Minds? Party Identification and Policy Preferences in the American Electorate". In: *American Journal of Political Science* 50.2, pp. 464–477.

Clarke, Harold D (2009). *Performance politics and the British voter*. Cambridge University Press.

Converse, Philip E (1964). "The nature of belief systems in mass publics". In: *Critical Review* 18.1-3, pp. 1–74.

DiMaggio, Paul, John Evans, and Bethany Bryson (1996). "Have American's social attitudes become more polarized?" In: *American journal of Sociology*, pp. 690–755.

Evans, G. and Anja Neundorf (2018). "Core Political Values and the Long-Term Shaping of Partisanship in the British Electorate". In: *British Journal of Political Science*.

Evans, Geoffrey and Nan Dirk de Graaf (2013). *Political choice matters: explaining the strength of class and religious cleavages in cross-national perspective*. OUP Oxford.

Evans, Geoffrey, Anthony Heath, and Mansur Lalljee (Mar. 1996). "Measuring Left-Right and Libertarian-Authoritarian Values in the British Electorate". In: *The British Journal of Sociology* 47.1, p. 93.

Evans, Geoffrey and James Tilley (July 2011). "How Parties Shape Class Politics: Explaining the Decline of the Class Basis of Party Support". In: *Brit. J. Polit. Sci.* 42.01, pp. 137–161.

— (Oct. 2012). "The Depoliticization of Inequality and Redistribution: Explaining the Decline of Class Voting". In: *The Journal of Politics* 74.4, pp. 963–976.

Evans, Geoffrey and James Tilley (2017). *The New Politics of Class: The Political Exclusion of the British Working Class*. Oxford University Press.

Fiorina, Morris (2017). *Unstable Majorities: Polarization, party sorting and political stalemate*. Hoover Institution Press.

Fiorina, Morris P, Samuel A Abrams, and Jeremy C Pope (2008). "Polarization in the American public: Misconceptions and misreadings". In: *The Journal of Politics* 70.02, pp. 556–560.

Fiorina, Morris P and Samuel J Abrams (2008). "Political polarization in the American public". In: *Annu. Rev. Polit. Sci.* 11, pp. 563–588.

Goren, Paul (2005). "Party identification and core political values". In: *American Journal of Political Science* 49.4, pp. 881–896.

Green, Donald P, Bradley Palmquist, and Eric Schickler (2004). *Partisan hearts and minds: Political parties and the social identities of voters*. Yale University Press.

Green, Jane (2007). "When voters and parties agree: Valence issues and party competition". In: *Political Studies* 55.3, pp. 629–655.

— (2015). "Party and voter incentives at the crowded centre of British politics". In: *Party Politics* 21.1, pp. 80–99.

Heath, Anthony, Geoffrey Evans, and Jean Martin (1994). "The measurement of core beliefs and values: The development of balanced socialist/laissez faire and libertarian/authoritarian scales". In: *British Journal of Political Science* 24.1, pp. 115–132.

Hetherington, Marc J (2009). "Putting polarization in perspective". In: *British Journal of Political Science* 39.2, pp. 413–448.

Hindmoor, Andrew (2004). *New Labour at the centre: constructing political space*. Oxford University Press.

Ho, Daniel E. et al. (2007). "Matching as Nonparametric Preprocessing for Reducing Model Dependence in Parametric Causal Inference". In: *Political Analysis* 15.03, pp. 199–236.

Huber, John and Ronald Inglehart (1995). "Expert interpretations of party space and party locations in 42 societies". In: *Party politics* 1.1, pp. 73–111.

Inglehart, Ronald (1997). *Modernization and postmodernization: Cultural, economic, and political change in 43 societies*. Vol. 19. Cambridge Univ Press.

— (2018). *Cultural Evolution: People's Motivations are Changing, and Reshaping the World*. Cambridge University Press.

Kitschelt, Herbert (1993). "Class structure and social democratic party strategy". In: *British Journal of Political Science* 23.03, pp. 299–337.

— (1994). *The transformation of European social democracy*. cambridge university press.

Lachat, Romain (2008). "The impact of party polarization on ideological voting". In: *Electoral Studies* 27.4, pp. 687–698.

Layman, Geoffrey C. and Thomas M. Carsey (Oct. 2002). "Party Polarization and "Conflict Extension" in the American Electorate". In: *American Journal of Political Science* 46.4, p. 786.

Layman, Geoffrey C, Thomas M Carsey, et al. (2010). "Activists and conflict extension in American party politics". In: *American Political Science Review* 104.02, pp. 324–346.

Levendusky, Matthew (2009). *The partisan sort: How liberals became Democrats and conservatives became Republicans*. University of Chicago Press.

Milazzo, Caitlin, James Adams, and Jane Green (Jan. 2012). "Are Voter Decision Rules Endogenous to Parties' Policy Strategies? A Model with Applications to Elite Depolarization in Post-Thatcher Britain". In: *The Journal of Politics* 74.1, pp. 262–276.

Munzert, Simon and Paul C. Bauer (2013). "Political Depolarization In German Public Opinion, 1980–2010". In: *Political Science Research and Methods* 1.01, pp. 67–89.

Polk, Jonathan et al. (Jan. 2017). "Explaining the salience of anti-elitism and reducing political corruption for political parties in Europe with the 2014 Chapel Hill Expert Survey data". In: *Research & Politics* 4.1, pp. 1–9.

Ray, Leonard (1999). "Measuring party orientations towards European integration: Results from an expert survey". In: *European Journal of Political Research* 36.2, pp. 283–306.

Stan Development Team (2016). *Rstanarm: Bayesian applied regression modeling via Stan*. R package version 2.13.1.

Steenbergen, Marco R. and Gary Marks (May 2007). "Evaluating expert judgments". In: *European Journal of Political Research* 46.3, pp. 347–366.

Whiteley, Paul et al. (2013). *Affluence, Austerity and Electoral Change in Britain*. Cambridge University Press.

Zaller, John (1992). *The nature and origins of mass opinion*. Cambridge university press.

Appendices for Depolarization, Repolarization and Redistribributive Ideological Change in Britain, 1983-2016

A Analysis of Hypotheses Using Multi-Nomial Cross-Lagged Regression Coefficients Only

Why is it not generally possible to make inferences about whether ideology was stable, and whether partisanship change or ideological change was responsble for partisan polarization dynamics from the parameters of multi-nominal cross-lagged panel models without further information?

The issue is straightforwardly that multi-nominal model parameters descibe transition probabilities, but the effect of these transition probabilities generally depends on the population that they operate on. These observations are not controversial, and follow directly from the fact that the transition probabilities describe transition matricies and the operation of transition matrices generally depends on the populations they operate on. For a general discussion of these features see for example Caswell 2001. We illustrate these points in the actual case we are interested in, that is the seven wave aggregate population composition described in their Table 1 (reproduced in Table 1) and the main model described in Table 2 of Evans and Neundorf 2018 (reproduced in Table 2).

A.1 Ambiguity about ideological stability

We begin by looking at the implications of the ideological stability coefficients alone (that is we ignore the impact of partisanship on ideological dynamics) for ideological change. This approach directly compares to Evans and Nuendorf, who also discuss

	Core values: classification		
	Centrist	Leftist	Rightist
Estimated proportion	58	20	22
Observed party identification (PID)			
No/other PID	52	37	28
Labour	27	58	05
Tories	20	05	66

Table 1: Latent values and partisanship (percent) (Source: Evans and Neundorf 2018, Table 1)

	Rightist		Centrist		Leftist	
DV = Core values	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.
Intercept	−0.89***	0.27	1.69***	0.22	−0.79*	0.39
Cross-lagged effects						
Conservative (t − 1)	−0.06	0.10	0.17**	0.06	−0.11	0.09
No/oth PID (t − 1)	−0.07	0.08	−0.06	0.05	0.13*	0.06
Labour (t − 1)	0.13	0.11	−0.11	0.06	−0.02	0.08
Stability coefficients						
Rightist (t − 1)	4.47***	0.44	−0.90*	0.41	−3.57***	0.79
Centrist (t − 1)	−0.94**	0.29	1.26***	0.23	−0.32	0.41
Leftist (t − 1)	−3.53***	0.45	−0.36	0.28	3.89***	0.44
DV = Partisanship	Tories		No/oth PID		Labour	
	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.
Intercept	−0.61***	0.06	0.72***	0.04	−0.11**	0.04
Cross-lagged effects						
Rightist (t − 1)	0.80***	0.05	−0.11**	0.04	−0.69***	0.06
Centrist (t − 1)	−0.10*	0.04	0.01	0.03	0.09*	0.04
Leftist (t − 1)	−0.71***	0.07	0.11**	0.04	0.60***	0.05
Stability coefficients						
Tories (t − 1)	2.48***	0.06	−0.62***	0.05	−1.86***	0.07
No/oth PID (t − 1)	−0.66***	0.07	1.31***	0.05	−0.65***	0.05
Labour (t − 1)	−1.82***	0.10	−0.69***	0.06	2.51***	0.06

Source: BHPS 1991–2007.
Note: the model includes the effects of socio-demographic covariates on initial partisanship and core values when respondents entered the panel. The coefficients are reported in Appendix 4. Effect coding. * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Table 2: Cross-lagged models: estimates of transition probabilities in raw form (Source: Evans and Neundorf 2018, Table 2)

	Ideology [t-1]		
[t]	Centrist	Leftist	Rightist
Centrist	.97	.13	.07
Leftist	.02	.87	.00
Rightist	.01	.00	.93

Table 3: Multi-nominal Cross-Lagged Model Ideological Stability Parameters in Transition Matrix Form. Source: Evans and Neundorf 2018 Table 2

ideological stability using only stability coefficients. Looking at the reduced parameter set has no impact on the conclusions which are drawn in this case (this is not surprising because the impact of partisanship on ideology is not significant in the model, which means that transition probabilities will be very similar for partisans and non-partisans). In this sub-section we show that the multi-nominal cross-lag ideological stability coefficients reported in Evans and Neundorf 2018 by themselve are compatible with ideological stability, ideological depolarization and ideological polarization conclusions. We also show that when analysed in conjection with information about population composition reported in Evans and Neundorf 2018 the model implies ideological depolarization conclusions.

Table 2 gives the stability coefficients in their raw logit form and Table 3 transforms into transition matrix form. The main observation in the paper supporting the conclusion that ideology is very stable is that the raw logit form coefficients are very large (and larger than the equivalent for party identification). The equivalent observation in transition matrix form is that the transition probabilities on the diagonal are close to 1. These transition probabilities are large on the diagonal, but this

operation of this matrix can best be understood by considering that the matrix has an equilibrium (77% centrist, 12 % rightist, 11 % leftist) and dynamics towards that equilibrium are described. Figure 1 shows the ambiguity that this creates about the description of ideological polarization trajectories by plotting trajectories of leftist, centrist and rightist population proportions from a depolarized, equilibrium and polarized initial starting points. From the depolarized starting point we observe ideological polarization (centrism declines whilst rightism and leftism increase), from equilibrium starting points we observe ideological stability (the proportions of centrism, leftism and rightism remain stable) whilst from a polarized starting point we observe ideological depolarization (centrism increases whilst rightism and leftism decrease).

The case of polarizaed initial conditions used in this example is of particular importance because 49% centrist, 25% leftist and 25% rightist, are the initial conditions which generate the seven wave population aggregate ideological composition reported in the paper and reproduced in Table 1 of 58% centrist, 20% leftist and 22% rightist. This shows that the information reported in Evans and Neundorf 2018 implies ideological depolarization, but the same conclusion is immediately accessible by noting that the reported aggregate population composition is more polarized than the matrix equilibrium.

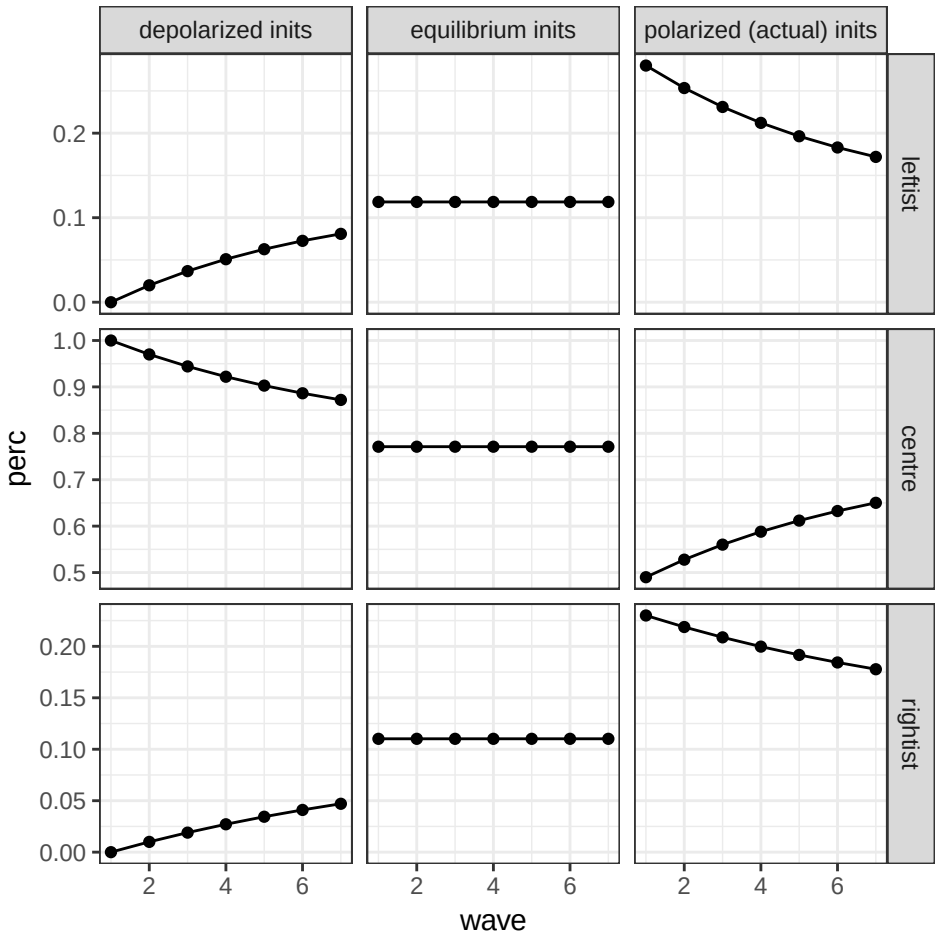


Figure 1: Multi-nominal logit predicted changes in leftist, centrist and rightist population compostion in seven survey waves from different initial conditions. The right-hand three panels show the ideological depolarization that arises from initial conditions that generate the observed seven wave aggregate ideological compostion reported in Evans and Neundorf (2018). The two other columns illustrate that the transition matrix would describe very different patterns if inital conditions were different and so no inferences can be made from model parameters alone.

A.2 Cross-lagged Panel Model Parameters and Further Information Imply Partisan Depolarization Was Caused by Ideological and Not Partisanship Change

We now turn to showing that the cross-lagged model analysis implies that ideological change and not partisanship change was responsible for the observed pattern of partisan depolarization. We also show that inferences about this cannot be made from model parameters alone in isolation from information about initial conditions.

Multi-nominal cross-lagged model the parameters describe two transition matricies, one of these matricies describes ideological dynamics and the other describes partisanship dynamics. The combined dynamics are described by the operation of both these matricies together. In addition to providing an account of both partisanship dynamics and ideological dynamics independently, because it models all 81 transitions between all nine latent states (which are the combinations of three ideological conditions and the three partisanship condition) the model also describes the changing association between ideology and partisanship. The cross-lagged coefficients are informative about the equiliburim state of the transition matrix. The insignificant cross-lagged coefficient of partisanship on ideology indicates that the equilibrium state of ideological transitions alone describes a condition where there is (approximately) zero correlation between ideology and partisanship. The significant cross-lagged coefficient of ideology on partisanship indicates that there is a correlation between ideology and partisanship in the equilibrium resulting from partisanship dynamics alone. If we were starting from an initial condition where ideology and partisanship were uncorrelated, we would conclude that increasing partisan polarization was due entirely to partisanship changes. However, the initial condition in the BHPS is that ideology and partisanship start from a highly correlated position. Therefore the ideological transitions described by the model are leading unambiguously to partisan depolarization, whilst the depolarizing 'desorting' described by partisanship transitions is being at least to some extent counter-acted by a sorting dynamics.

To demonstrate this we plot patterns of partisan polarization measured by correlation between partisanship (where Conservative = 0, No Identification = 0.5, and Labour = 1) and ideology (rightist=0, centrist=.5, leftist=1) all caused by the full transition matrix derrived from the parameters in Table 2 above from different starting points. We plot trends in partisan polarization with both ideological and partisanship transitions in place in grey, the trends caused by partisanship change alone in the left panels in black and the trend caused by ideological change alone in the right hand panels in black. The three rows in Figure 2 are all generated by the same transition matrix operating on different starting populations. In the top case partisanship change alone does not come close to generating the partisan polarization trend, but ideological change does, in the middle case ideological change alone does not come close to generating the partisan polarization trend, but partisanship change does, whilst in the bottom case both dynamics are required to come close to the partisan polarization trend. Taken together this illustrates that the question of whether partisanship change or ideological change explains observed trends in partisan polarization cannot be determined from model parameters (or equivalently transition matricies) alone. However, the top panel is the trajectory which is of substantive interest because it is these initial starting points which generates the seven wave population compostions reported in Table 1. It is thus clear that cross-lagged models show that ideological change is required and partisanship change is not required to explain the observed pattern of partisan depolarizaiton. There is thus agreement between cross-lagged model conclusions and our analysis using fixed partisanship and fixed ideology trends.

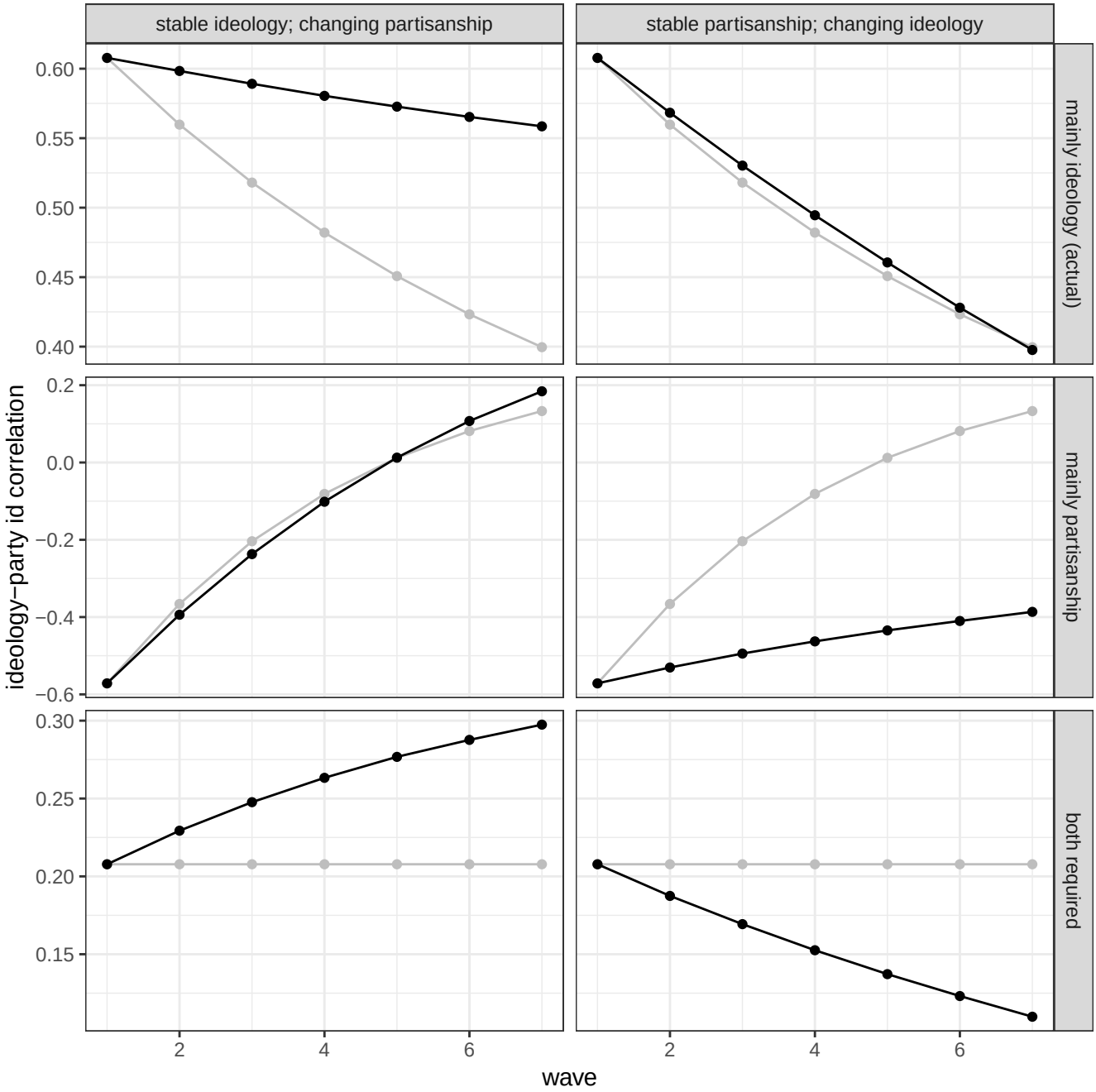


Figure 2: Multi-nominal logit cross-lagged model predicted partisan depolarization (grey) compared to model projected partisan depolarization by changing partisanship alone (black, left panels) and changing ideology alone (black, right panels) from initial conditions generating observed seven wave reported population structure (top panel) and two other starting points. The top panel shows that the model and reported starting positions imply changing ideology is required but changing partisanship is not required to explain partisan depolarization. The other panels show that this conclusion cannot be derrived from the transition matrix alone.

A.3 Cross-Lagged Panel Model Parameters and Further Information Imply Ideological Convergence amongst partisans and initially ideological similar non-partisans alike

We now show that the cross-lagged model parameters imply that partisans and initially ideologically similar non-partisans show similar patterns of ideological convergence. We create the group of initially ideologically similar non-partisans by creating a case for each partisan with the same ideological condition but with a non-partisan ideological state. Figure 3 provides the evidence on the relative depolarization rates. The left panel shows the clearly depolarizing trend of the initial group of partisans and the right hand panel showing depolarizaiton between non-partisans with the same initial ideological distribution as the partisans. The two groups share a virtually identical downward trend so we conclude that that convergence is observed in partisans and initially ideologically similar non-partisans alike.

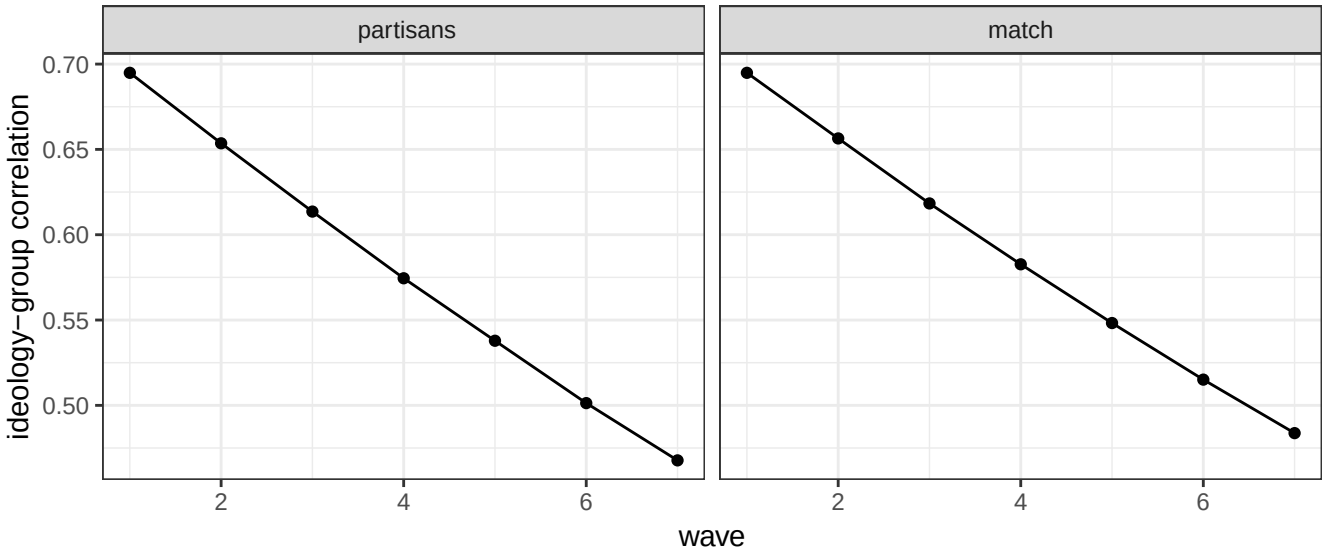


Figure 3: Partisan depolarization (fixed groups) and matched (fixed groups) depolarization

B Redistributive Questions Used in the Analysis

Survey	Name	Question	Response type	Number waves
BSAS scale	rich	There is one law for the rich and one for the poor	5-point agree disagree	29
BSAS scale	wealth	Ordinary working people do not get their fair share of the nation's wealth	5-point agree disagree	27
BSAS scale	redist	Government should redistribute income from the better off to those who are less well off	5-point agree disagree	28
BSAS scale	boss.exploit	Management will always try to get the better of employees if it gets the chance	5-point agree disagree	29
BSAS scale	big.busns	Big Business benefits owners at the expense of workers	5-point agree disagree	28
BSAS	dole	Are benefits for unemployed people too low and cause hardship or too high, discouraging them from finding jobs?	5-point agree disagree	29
BSAS	more.welf	Government should spend more on welfare benefits for the poor even if it leads to higher taxes	5-point agree disagree	26
BSAS	unemp.job	Around here most unemployed people could get a job if they wanted one	5-point agree disagree	26
BSAS	welf..feet	If welfare benefits weren't so generous, people would learn to stand on their own two feet	5-point agree disagree	26
BSAS	welf.dam.lives	Cutting welfare benefits would damage too many people's lives	5-point agree disagree	17
BSAS	soc.help	Many people who get social security don't really deserve any help	5-point agree disagree	26
BSAS	dole.fidl	Most people on the dole are fiddling in one way or another	5-point agree disagree	26
BSAS	income.gap	Would you say the gap between those with high incomes and those with low incomes is too large, about right or too small?	3 choices	27
BSAS	tax.spend	Should government reduce taxes and spend less on health, education and social benefits OR keep taxes and spending the on these services the same OR increase taxes and spend more on health, education and social benefits	3 choices	32
BSAS	proudwlf	The creation of the welfare state is one of Britain's proudest achievements	5-point agree disagree	17
BSAS	fail.clm	Do you agree that large numbers of people who are eligible for benefits these days fail to claim them	binary agree disagree	20
BSAS	welf.helpn	The welfare state encourages people to stop helping themselves	5-point agree disagree	29
BHPS	fairshare	Ordinary people get a fair share of the nation's wealth	5-point agree disagree	7
BHPS	onelaw	The is one law for the rich and one for the poor	5-point agree disagree	7
BHPS	privateent	Private enterprise is the best way to solve Britain's economic problems	5-point agree disagree	7
BHPS	gvtprovjob	It is the government's responsibility to provide a job for everyone who wants one	5-point agree disagree	7
BHPS	strngtu	Strong trade unions are needed to protect the working conditions and wages of employees	5-point agree disagree	7
BHPS	stateown	Major public services ought to be in state ownership	5-point agree disagree	7
BES	redist	Some people feel that government should make much greater efforts to make people's incomes more equal. Other people feel that government should be less concerned about how equal people's incomes are. And other people have views in-between. Which view comes closest to your own?	11-point self-placement	4
BES	natlize	Some people feel that government should nationalize many more private companies. Other people feel that government should sell off many more nationalised industries. And other people have views somewhere in-between. Which view comes closest to your own?	11-point self-placement	4
BES	infunemp	Some people feel that getting people back to work should be the government's top priority. Other people feel that keeping prices down should be the government's top priority. And other people have views somewhere in-between. Which view comes closest to your own?	11-point self-placement	4
BES	taxspend	Some people feel that government should put up taxes a lot and spend much more on health and social services. Other people feel that government should cut taxes a lot and spend much less on health and social services. And other people have views somewhere in-between. Which view comes closest to your own?	11-point self-placement	4

Table 4: Redistributive Attitude Questions in the British Social Attitudes Survey, the British Household Panel Survey and the British Election Study

C Additional Evidence on Ideological Polarization

	Proportion of extreme values in redistributive attitudes				
		1983-2007			2007-2016
	All Surveys	BSA	BHPS	BES	BSA
Intercept	0.24 (0.02)	0.21 (0.01)	0.17 (0.02)	0.45 (0.06)	0.04 (0.01)
Time (decades)	-0.04 (0.01)	-0.04 (0.01)	-0.03 (0.01)	-0.05 (0.04)	0.04 (0.01)
Residual SD:					
Intercepts	0.11	0.05	0.05	0.11	0.02
Trends	0.02	0.02	0.02	0.06	0.02
Data	0.03	0.03	0.02	0.06	0.01
N	275	217	42	16	130
Groups	23	13	6	4	13

Table 5: Results of Multi-Level Models With Dependent Variable as proportion of extreme values in Redistributive Attitudes in Period 1983-2007 and 2007-16. Models show results across all three surveys and in each survey independently.

Figure 4 shows the proportion of extreme redistributive attitudes in each survey wave relating to each of the twenty-three attitudes with more than three response categories and models are summarized in Table 5. The overall negative trend in extreme values across all three surveys in the first period is summarized in the regression with the significant trend of -.04 (SE: .01) per decade. Significant average negative trends are also found when analyzing the subset of attitudes from just the BSAS and the BHPS, the trend in the BES data alone is also negative but not statistically significant. In the period after 2007 the pattern is reversed, with increasing proportion of redistributive attitudes falling into the extreme categories with an average positive per decade trend of +.04 (SE: .01).

	ρ = attitude × attitude				
		1983-2007			2007-2016
	All Surveys	BSA	BHPS	BES	BSA
Intercept	0.25 (0.01)	0.24 (0.01)	0.34 (0.01)	0.30 (0.02)	0.07 (0.02)
Time (decades)	-0.03 (0.00)	-0.02 (0.00)	-0.08 (0.01)	-0.02 (0.02)	0.05 (0.00)
Residual SD:					
Intercepts	0.15	0.16	0.05	0.03	0.19
Trends	0.03	0.03	0.02	0.03	0.03
Data	0.03	0.03	0.03	0.04	0.03
N	2124	1995	105	24	1176
Groups	157	136	15	6	136

Table 6: Results of Multi-Level Models With Dependent Variable as Correlation between Two Redistributive Attitudes in Period 1983-2007. Models show results across all three surveys and in each survey independently.

Figure 5 and Table 6 show the results relating to attitude constraint. Because constraint involves the relationship between two attitude pairs there are 157 attitude pairs to consider. This is too many to display, so for reasons of space figure 5 is restricted to all 15 attitude pairs from the BHPS, all 6 pairs from the BES the all 10 attitude pairs from the BSAS redistributive scale (thus omitting 126 pairs from the BSAS). All 157 attitude pairs are included in the model used to generate the trend lines, and in the regression table. During the period of partisan depolarization there is a statistically significant decline in attitude constraint across the 157 attitude pairs of -.03 (SE: .00) per decade. Significant negative trends are also found when analyzing the subset of attitudes from just the BSAS and the BHPS, the trend in the BES data alone is also negative but not statistically significant.

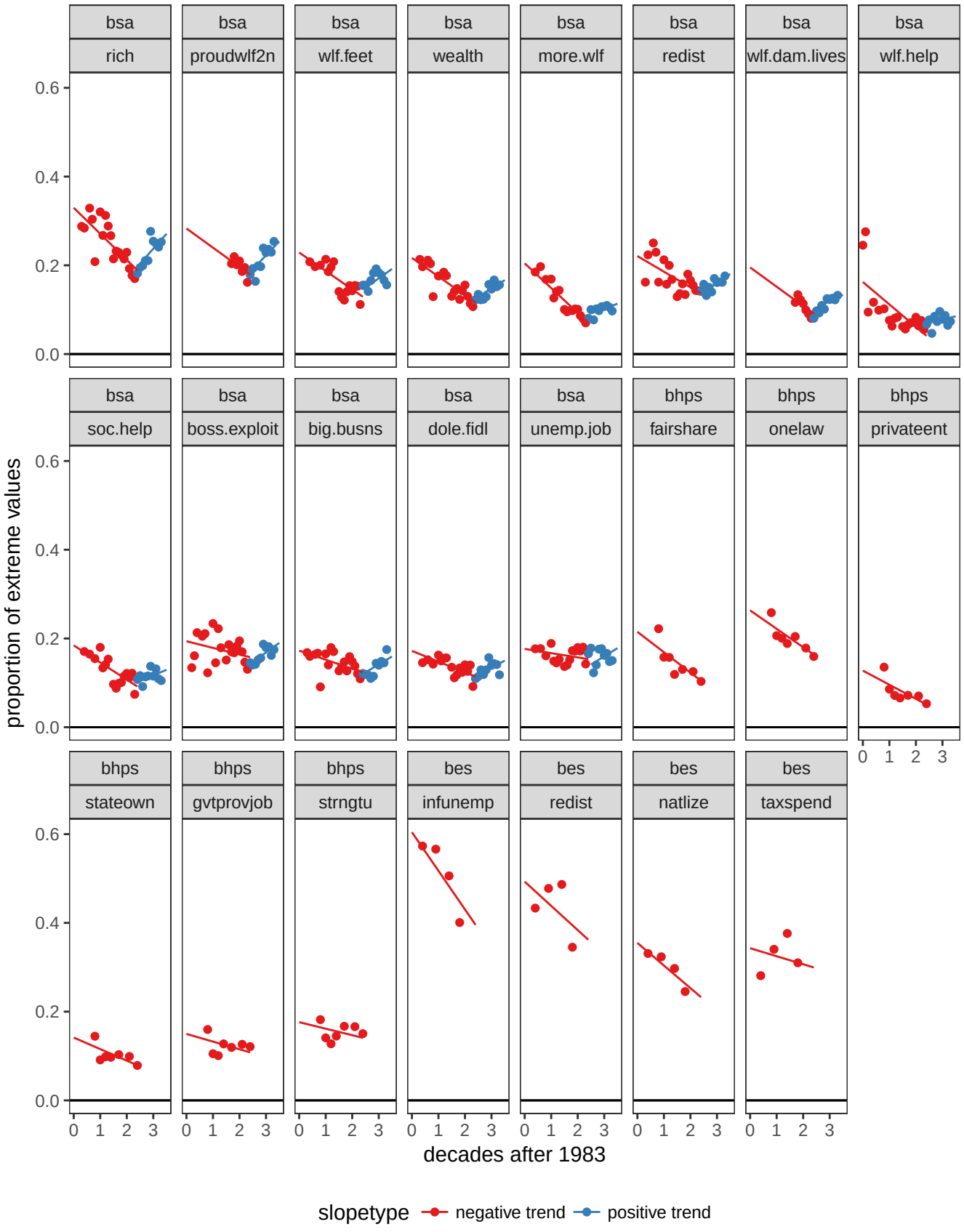


Figure 4: Trends in Proportion of Extreme Views

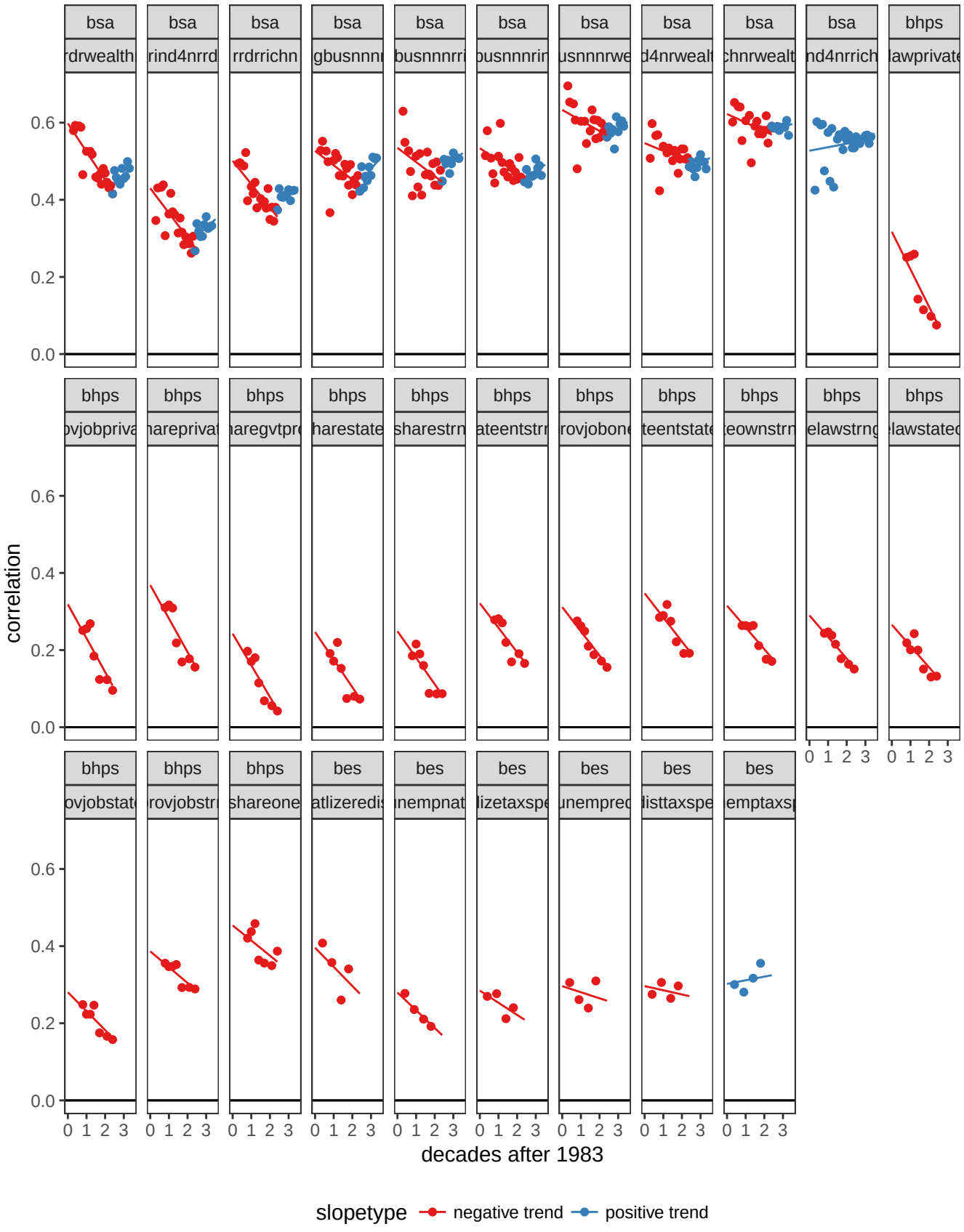


Figure 5: Trends in Constraint Between Redistributive Attitudes 1983-2007 and 2007-2016

In the period of party repolarization after 2007 the reverse pattern is found with a significant positive trend of redistributive attitude constraint of magnitude +.05 (SE: .00).

	σ of redistributive attitudes				
		1983-2007			2007-2016
	All Surveys	BSA	BHPS	BES	BSA
Intercept	0.21 (0.01)	0.22 (0.00)	0.22 (0.01)	0.16 (0.01)	0.18 (0.00)
Time (decades)	-0.01 (0.00)	-0.01 (0.00)	-0.01 (0.00)	-0.01 (0.00)	0.01 (0.00)
Residual SD:					
Intercepts	0.03	0.02	0.01	0.01	0.01
Trends	0.01	0.01	0.01	0.01	0.00
Data	0.01	0.01	0.01	0.00	0.01
N	275	217	42	16	130
Groups	23	13	6	4	13

Table 7: Results of Multi-Level Models With Dependent Variable as Standard Deviation of Redistributive Attitudes in Period 1983-2007. Models show results across all three surveys and in each survey independently.

The models for standard deviations broken down by survey are summarized in Table 7. In the data overall we find that there is a statistically significant decline in the average standard deviation of attitudes, the magnitude of which is -.01 per decade (SE: .00) during the period of party depolarization. A significant negative trend is found in all three of the surveys independently. In the period of party polarization after 2007 this trend is reversed with a statistically significant trend of +.01 (SE: .00).

D Additional Evidence on Partisans and Non-partisan ideological trends

D.1 Trends in Ideological Depolarization amongst Partisans and Non-Partisans

	σ		extremism		constraint	
	non-partisan	partisans	non-partisan	partisans	non-partisan	partisans
Intercept	0.19 (0.01)	0.21 (0.00)	0.12 (0.02)	0.15 (0.01)	0.14 (0.02)	0.40 (0.01)
Time (decades)	-0.01 (0.00)	-0.01 (0.00)	-0.02 (0.01)	-0.03 (0.01)	0.01 (0.01)	-0.09 (0.01)
Residual SD:						
Intercepts	0.01	0.01	0.05	0.04	0.06	0.04
Trends	0.01	0.01	0.02	0.02	0.02	0.02
Data	0.01	0.01	0.02	0.02	0.04	0.03
N	42	42	42	42	105	105
Groups	6	6	6	6	15	15

Table 8: Results of Multi-Level Model With dependent variable as standard deviation, extremism and constraint of responses amongst the fixed group of partisans (partisan in initial wave) and the fixed group of non-partisans (non-partisan in initial wave) in the BHPS 1991-2007.

Table 8 shows the trends in attitude standard deviations, attitude extremism and attitude constraint in the BHPS for the fixed group of inital wave Labour and Conservative partisans and the fixed group of initial wave non-partisans. The analysis shows that there is a signficant reduction in standard deviations, attitude extremism and attitude constraint amongst the partisans, and a significant reduction in standard deviations and extremism but not constraint amongst the non-partisans. The central elements of ideological convergence can be observed amongst the non-partisans, so we reject the idea that ideological

convergence is restricted to partisans whilst the ideology of non-partisans remains unchanged, but ideological convergence is much more pronounced amongst the partisans. Although signs of convergence are much clearer amongst partisans than non-partisans, analysis does not establish the elite cue claim that ideological convergence is because of partisanship. Cleaer patterns of convergence could occur because of the large initial differences, particularly on constraint, between partisans (intercept: .40 SE: .01) and non-partisans (intercept: .14, SE: .01). To address this question directly it is necessary to examine the ideological trajectory of initially ideologically similar partisans and non-partisans, that is the logic of the analysis in section 7.

D.2 Balance Tests on Ideological Matching

case	variable	non.partisan	partisan	difference	sig.diff
Labour and Labour Matches	fairshare	4.02	4.00	-0.02	
Conservative and Conservative Matches	fairshare	3.15	3.16	0.01	
Labour and Labour Matches	onelaw	4.07	4.08	0.00	
Conservative and Conservative Matches	onelaw	3.26	3.23	-0.03	
Labour and Labour Matches	privateent	3.61	3.59	-0.03	
Conservative and Conservative Matches	privateent	2.50	2.54	0.05	
Labour and Labour Matches	stateown	3.43	3.46	0.02	
Conservative and Conservative Matches	stateown	2.58	2.56	-0.02	
Labour and Labour Matches	gvtprovjob	3.53	3.47	-0.05	
Conservative and Conservative Matches	gvtprovjob	2.59	2.49	-0.10	*
Labour and Labour Matches	strngtu	3.78	3.82	0.04	
Conservative and Conservative Matches	strngtu	2.56	2.56	0.01	

Table 9: Balance check on ideological matching. Significance indicated by Mann-Whitney Test. * indicates $p<.05$.

References

Caswell, Hal (2001). *Matrix Population Models*. Sinauer Associates.

Evans, G. and Anja Neundorf (2018). "Core Political Values and the Long-Term Shaping of Partisanship in the British Electorate". In: *British Journal of Political Science*.